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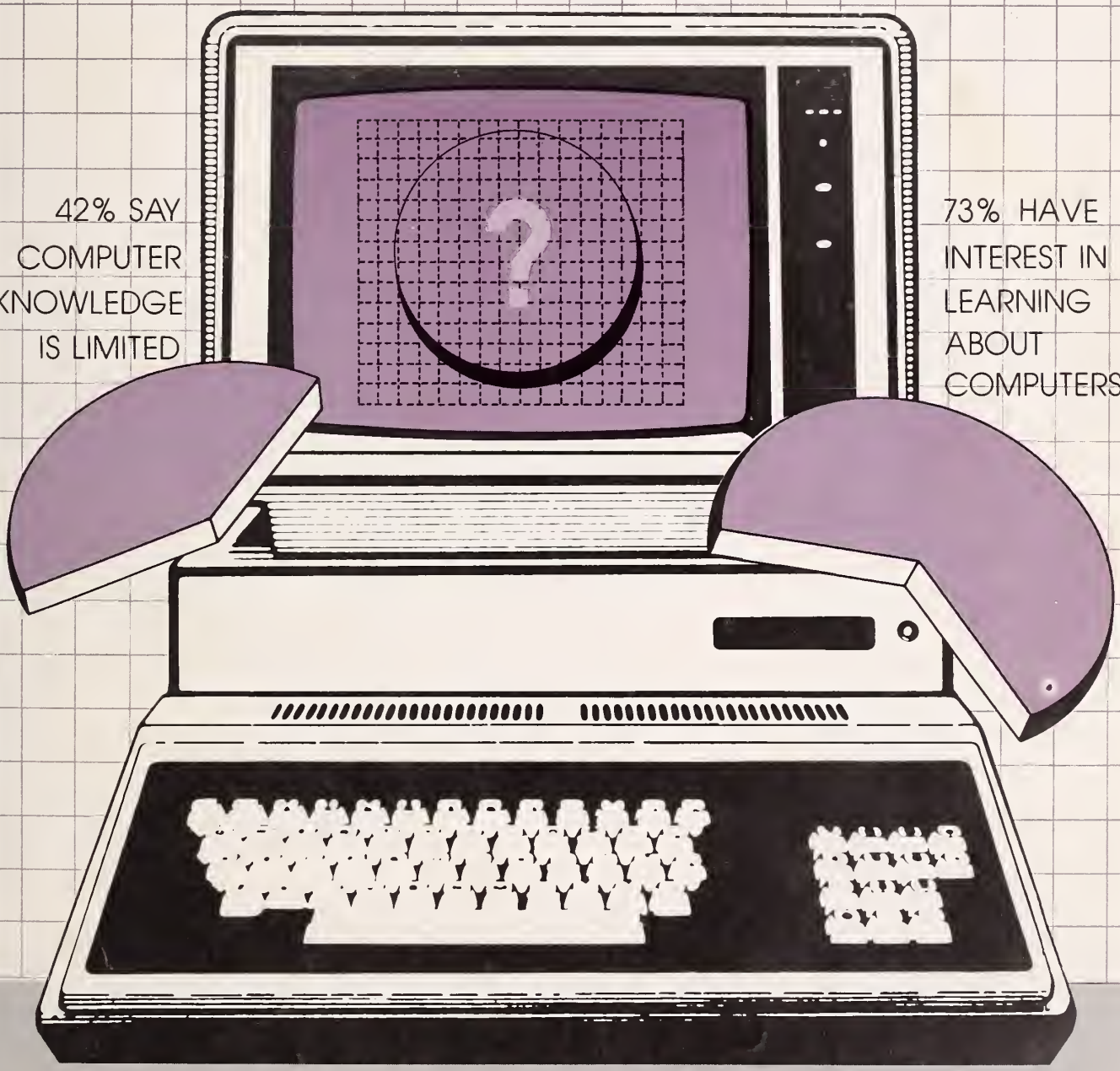
Iowa Medicine

Journal of the Iowa Medical Society

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73% HAVE INTEREST IN LEARNING ABOUT COMPUTERS



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January 1985

IowaMedicine

Volume 75 Number 1

Journal of the Iowa Medical Society

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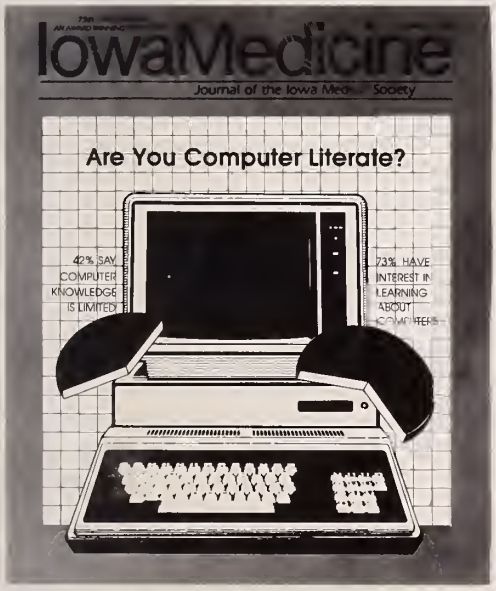
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ABOUT THE COVER



ABOUT THE COVER — According to a recent survey of Iowa physicians, there is a low to medium understanding of computers and there is a medium to high interest in learning more about their application to medical practice. The IMS Committee on Member Services is developing a program to help physicians acquire a better understanding of computer technology. This program will include several articles about computers, the first of which appears on page 9.

IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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PRESIDENT'S PRIVILEGE



American Medical Association meetings are great places to get a fresh perspective on what is in store for the practice of medicine in the future.

As your president, I attended a special 2-hour briefing by members of the AMA Board of Trustees. There were several of these held concurrently, designed to be small enough so that the trustees could also hear from us.

Following that, there was a 2½-hour Forum for Medical Affairs. I was particularly impressed by the remarks of Chuck Rund, director of research and strategy for the 1984 Reagan-Bush campaign, and by those of George H. Ryan, a pharmacist who is lieutenant governor of Illinois.

Chuck Rund outlined trends shown by the election: more optimism, more common sense pragmatism, more orientation toward the future, more individual involvement in the process, and a clear rejection of the old "Franklin Roosevelt" coalition as represented by Walter Mondale.

George Ryan cited the great concern for costs, including costs of medical care, and urged that cost containment come from within medicine.

We also heard a lot about perception during the election and hints by Reagan's opposition that his perception was better than his reality.

The *perception* of the public regarding doctors is that they charge too much, are too unavailable, and are unwilling or unable to do anything about costs. The public is losing confidence in doctors.

The solution? The window of opportunity suggested by Chuck Rund? It is leadership by the profession — not a special interest rear guard action.

Your president believes that each of us gives excellent care to his patients, but this is no longer enough. We must band together as a community of physicians to help solve the problems of the geographic community which we serve.

If we are perceived to be concerned and caring, our leadership will draw a large following. If we are perceived as interested only in our turf and our pocketbooks, we shall fail.

The choice is ours.

John Tyrrell, MD

John E. Tyrrell, M.D.
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COMMENTING EDITORIALLY



VOLUME 75: Number 1

THE HOUSE OF DELEGATES of the Iowa State Medical Society declared on May 18, 1911, that there be established "an official journal of the Iowa State Medical Society, and that the same be called the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY." Further, it was declared that a committee on publications, together with the editor, shall have editorial control of the JOURNAL, and provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Society.

Another journal, THE IOWA MEDICAL JOURNAL, owned and published by Dr. E. E. Dorr of Des Moines, published the proceedings of the Society between 1906 and 1911. Initially, the new JOURNAL OF THE IOWA MEDICAL SOCIETY did not contain advertising because of previous contracts held by Dorr's journal, and also because of existing postal regulations. Editorial comments in the first issue furthermore stated, "THE JOURNAL OF THE IOWA MEDICAL SOCIETY has decided to keep free from such entanglements and will start out without any commercial relations with advertising agencies. It will be conducted for the present at least, as a purely literary magazine, depending entirely upon the financial sources of the State Society."

The first issue of our JOURNAL was published in July, 1911, under the editorship of D. S. Fairchild, M.D., a Clinton physician. C. A. Boice, M.D., Washington, was the associate editor. The first year was a success and in his presidential report to the House of Delegates on May 8, 1912, L. W. Littig, M.D., Davenport, declared the JOURNAL to be a masterpiece of medical journalism. He alluded to gems of writing and gave a special accolade to a paper by Dr. Boice on "Ethics of Practice," which appeared in the September 15, 1911, issue.

A bit more history seems appropriate. In 1912, post office regulations were clarified and for financial reasons, the JOURNAL began to carry advertising. In 1914, the Society purchased Dr. Dorr's publication and the IOWA MEDICAL JOURNAL merged with the JOURNAL OF THE IOWA MEDICAL SOCIETY. The first issue under this merger was January, 1915. In 1961, the name of our Society was shortened to Iowa Medical Society, and the most recent change was last year when the name of our JOURNAL was changed to IOWA MEDICINE. We continue to identify ourselves as JOURNAL OF THE IOWA MEDICAL SOCIETY in a subtitle.

> ***"In 1961, the name of our Society was shortened to Iowa Medical Society, and the most recent change was last year when the name of our* JOURNAL *was changed to* IOWA MEDICINE"**

In 1911, there were about 3,500 physicians in Iowa; 2,000 were members of the Society. Throughout the first year of the JOURNAL, the editor urged all county medical societies to recommend their eligible physicians join the Society. Incidentally, he also urged the county society secretaries to get their reports in on time.

Now we enter our 75th year of medical journalism in Iowa. In recent years, we have updated our magazine. We believe we have been successful in continuing the traditions set forth by the original editors. Will our president declare at the 1985 House of Delegates meeting that IOWA MEDICINE is still a masterpiece of medical journalism? As we present the beginning of Volume 75, we pledge continuing service of high order to the physicians of Iowa. — M.E.A.

(More Editorials page 12)

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Do You Need A Computer In Your Office?

DUANE C. ABBEY, Ph.D., and
MARY W. ABBEY

You may "feel" you need a computer in your office. So how do you deal with that feeling? How do you get to a "go" or "no-go" decision point? The exploratory process is critical. The potential for containing future costs will probably overshadow immediate savings. But increasing your efficiency and your service capacity are as important. This is the first of several articles to help Iowa physicians understand what a computer system can do.

Is a computer needed today in the modern office or clinic of the Iowa physician? Yes or no? The predictable response is affirmative. But this answer is given frequently without full consideration of all implications.

The rapid evolution of computer technology has a way of raising desire levels. This can occur after only limited exposure. It may emerge after a glimpse at what another physician is doing with this technology.

Obviously, with a competitive medical practice environment and with ever-increasing governmental regulation, there is a need for optimal office efficiency. Given these circumstances, the practicing Iowa physician may sense a need to explore what computer technology can offer. However, turning a "sensed" need into a more quantitative and qualitative form is not an easy process. But it is a critical process that must be undertaken if wise decisions are to be made about the use of computer technology.

Dr. Abbey is a partner in Coordinated Financial Services, West Des Moines, where he provides financial and computer consultation. His wife, Mary, is a computer scientist and systems management specialist; together they form Abbey & Abbey, Consultants.

WAYS TO USE COMPUTERS

Computers can perform many functions in a medical practice. Among the broad areas of application are three basic ones:

1. **Practice Management**
2. **Medical Data Base Information Retrieval**
3. **Scientific Medical Applications**

This discussion will concentrate on the first two. Our focus will also be on the in-house computer, meaning a system which resides and is operated in the office. The obvious alternative to having your own computer system is to rent and use one belonging to someone else. This is possible with a terminal and a telephone hookup. This is called "time-sharing" since you are one of several users tied into a large computer system. A further option is one of physically submitting input documents to a service bureau where the processing occurs. The completed work product is delivered when finished.

The "time-share" and "service bureau" approaches meet certain needs. However, for a medical office to achieve the fullest computer potential, ownership of an in-house system is doubtless the top option. Use of the in-house computer still carries with it the need for communication with other larger external systems to permit certain specialized applications.

THE BASIC QUESTION OF NEED

The basic question a physician must answer early in the analysis is:

If I had a computer system to do whatever I want done, what do I want it to do?

To answer this fundamental question, a "wish list" must be compiled. It will set forth as completely as possible what you want your computer system to do. Do not restrict yourself

initially to what certain systems can or cannot do. Those limits will emerge quickly enough. For openers put down all of those ideas that will serve to make your medical practice optimally efficient from the perspectives of patient care and practice management. Once this is done proceed to examine available hardware and software with the attendant costs and benefits.

Your objectives can be as general as increasing office efficiency. Or they can be as specific as automating the billing system. The computer has a near limitless potential in office automation. The question becomes one of cost. If you have an application need that is not yet standardized, meaning a programmed system is unavailable, then you will have to pay the price to have the system developed. Most of the items on your "wish list" will have been addressed by the medical computer community.

SAVING MONEY/CONTAINING COSTS

The dual idea of saving money and/or containing costs is basic in any consideration of a computer system. If your first notion is that a computer system will *not* produce notable early savings, you may well be correct. The best likelihood is that a system will help you contain future costs after it has been fully integrated with your total practice. The installation and integration process may take up to a year. You should be realistic about immediate savings with a view to containing future operational costs.

Problems must be separated from opportunities in the consideration of computer use. If your accounts receivable management process and your billing system are reasonably efficient in their present form, then a computer is apt to increase this efficiency and give you faster, labor-saving service. However, if your system is inefficient now and the victim of poor record keeping, then a computer will serve only to magnify the situation. This is where the "garbage in-garbage out" phrase has meaning.

CLAIMS HANDLING/OTHER FINANCIAL IMPLICATIONS

There is much interest today in moving claims as expeditiously as possible from provider to third-party. This practice is now operational in a few offices with "on-line" telephonic hookups to specific carriers. There is substantial potential here for the transmission of paperless claims of differing formats from the same patient record base.

Third-party carriers are pressing the use of electronic claims transmission. The government has urged its Medicare carriers to advocate such application. The trend has progressed to the point that third-parties are beginning to impose disincentives on those providers unwilling to consider movement away from on-paper claims submission.

The overall financial management of a medical practice is apt to improve significantly when manual records are converted to an efficiently operated computer system. This conversion includes, most commonly, accounts payable, payroll and general accounting. Many statistical analyses will become available from the computer. There can be built in as well a safeguard against any fraudulent activity.

The progress of a medical practice can be measured thoroughly in terms of productivity, patient population, scheduling procedures, and so on.

MEDICAL RECORD KEEPING

The medical record is the crucial in-house document. Its maintenance is essential to the provision of quality care. The orderliness and the completeness of any medical record are of the utmost importance in the delivery of patient care and in the protection against liability action.

The significant amount of information contained in a relatively large number of patient files can be accommodated in a computer system. Such a conversion will provide quick access to information needed when a patient is present for an appointment. Office efficiency should be enhanced notably.

Entering existing medical records into a computer is apt to be a time-consuming proposition. It is a process that can be accomplished on a gradual basis with priority given to records where access needs are more frequent. A manual system will be needed in all probability for backup and for information that cannot appropriately be put into the computer.

APPOINTMENTS AND SCHEDULING

The scheduling of appointments is another area where efficiency is important if a medical practice is to be successful. A manual appoint-

HIGH COMPUTER INTEREST

Seventy-three percent of the nearly 700 Iowa physicians who answered an October 1984 Iowa Medical Society survey to measure computer knowledge/interest said they have a medium to high interest in learning more about this technology and its application to medical practice.

The IMS survey is a project of the Committee on Member Services. It is part of an effort to see where the IMS can help its member physicians decide how they can make computers enhance the quality and efficiency of their service.

Here are additional findings from the IMS survey:

- **42% said their computer knowledge level is between low and medium.**
- **44% said they are now using a computer in some form. Of this group, 16% use a computer service, 27% have a terminal hookup, and 83% have in-house equipment.**
- **42% plan to acquire microcomputer hardware in the near future.**
- **74% are interested in having workshops/consultation on computer use.**

The IMS Committee on Member Services is now blueprinting a program to help Iowa physicians increase their understanding of computer potential. This effort appears appropriate with 81% of the survey respondents indicating an interest in having the Society furnish educational support. The article by Duane and Mary Abbey is a first step toward this goal.

ment process works well with careful management. However, in situations where changes are made and schedules are juggled, manual systems can become hard to decipher. This is particularly true where several physicians are represented.

Manually managed appointment books are usually located at a single point in an office. Access to information generally involves an intraoffice call or a trip to the appointment book. With an in-house computer and several terminals, this information is accessible from various locations.

When information is stored at a central location within an office and there is remote electronic access to it, this is called a "local area network" (LANs for short). With this capability, patient records, scheduling, billing and other information is centrally located but immediately accessible from different locations in the office.

MEDICAL INFORMATION RETRIEVAL

Physicians know that massive amounts of medical information are available through various bibliographic information retrieval services. Use of such resources is possible when your office is able to communicate directly with these data bases.

Attaining telecommunications capability is the first step. It is then necessary to learn how to retrieve what is desired. This is an art in itself. Telecommunications offers the potential for teleconferencing, electronic mail, transmission of prescriptions, etc.

USER NEEDS/ACCEPTANCE

Use of computer technology is sometimes complicated by the need to hire systems analysts and programmers. The potential computer user may have a special application requiring the use of such personnel. The level of physician concern here need not be great with increasing software to help with most individual applications.

In today's computer milieu we have the acceptance of word processors by secretaries and clerical personnel. We have electronic spreadsheets to develop tailored financial applications. We have data base management systems to help set up individual data bases with the ability to manipulate the information and generate reports. We have graphic systems to depict statistical information in varying forms. All of this clearly indicates that software is becoming increasingly "user-friendly."

(Please turn to page 12)

The critical question to ask before you become serious about acquiring and using computer technology is:

What am I going to do with it after I have it?

The answer to this question will move you toward the next question, "Do I really need a computer for my practice?" If you can determine what you are going to do with it, you will be much closer to answering the question of whether you really need a computer.

COMMENTING EDITORIALLY

(Continued from page 7)

IMS — 1984

AN INVENTORY is traditional as one year ends and we move ahead. 1984 was a busy and exciting year for the Iowa Medical Society. Much was accomplished; groundwork was laid for the future.

Membership: There were 3,295 physician members of the IMS in 1984; that's an increase of 91 over the previous year. This represents about 85% of the eligible physicians of Iowa. This compares very favorably with other state medical associations. During the spring, an active and successful membership recruitment campaign was undertaken by the Judicial Council.

Legislative Liaison: Legislation before the Iowa General Assembly is monitored constantly. Matters which may affect the practice of medicine and public health are followed by IMS leaders. The positions taken by the Society's legislative strategists are based on policy determined by the IMS House of Delegates. The IMS works with the AMA on federal legislation being considered by the U.S. Congress. Close liaison is maintained with all public and private agencies known to have interest in medicine and health. Through such contacts the concerns of Iowa physicians are advanced in a positive way.

Journalism: IOWA MEDICINE continues to be a top-flight publication. The name was changed in 1984 as was the format. Another Sandoz award was presented to our magazine; the fourth in recent years. Other publications have reprinted articles from IOWA MEDICINE. We were privileged to host the biennial conference of the State Medical Journal Advertising Bureau in October, a meeting attended by more than 50 editors from medical journals around the country.

IMS Auxiliary: For the first time a very successful mailing was sent to all hospitals and volunteer health agencies in Iowa to solicit nominations for the Volunteer Health Service award recipient. The Auxiliary co-sponsored the Iowa Coalition for Comprehensive School Health Education Conference. This conference entitled, "Moving Ahead in Health Education," was attended by approximately 300 nurses, school administrators and students.

A fall Auxiliary seminar entitled, "Skills Development/Personal Growth," was presented for members and guests. The annual brunch for spouses of the state legislators was again hosted in 1984 by the Auxiliary.

General Activities: The IMS is spearheading implementation of a "Prescription Abuse Data Synthesis" (PADS) project in Iowa. This project has been designed by the AMA to thwart the diversion of licit drugs for illicit purposes. The office of the Governor has developed a strong interest in the project and is serving as the sponsoring agent, with the IMS remaining actively involved.

The IMS maintains its involvement in the Health Policy Corporation of Iowa, and is represented on the Board of Directors.

Various seminars have been presented by the Society for interested members. Subjects covered have included practice management, financial planning and risk management. The 1984 Conference on Medical Aspects of Sports was held in cooperation with the Iowa High School Athletic Association.

The Iowa Medical Foundation Scanlon Medical Student Loan Program allocated $130,000 for the academic year 1984/85. Approximately 45 students made use of these loan funds.

Insurance programs promoted by the IMS have gained in participation. Group automobile insurance, workers' compensation,

accident, and disability, life and other coverages are on the IMS menu. This year the groundwork has been laid for the new insurance for our members — medical liability. Members will be kept informed of this as the total package becomes available in 1985.

Yes, it has been a busy and fruitful year. Numerous other accomplishments could be cited. To say the least, the IMS, your Society, is a working society. Our members can be justly proud of the plans, programs and accomplishments so ably achieved by active Society officers, committee members and staff. 1985 presents new challenges as well as a continued commitment to our historical traditions. Together we forge ahead to make Iowa medicine better for all the citizens of this great state. — M.E.A.

HALL OF FAME

IF YOU READ the small news items in the newspaper, you will know by now that a Jazz Musician Hall of Fame has been founded within the past year. Other halls of fame can be mentioned: the Iowa Women's Hall of Fame, the Great Western Heroes Hall of Fame (honorees include not only John Wayne and Roy Rogers, but somebody named Wade "Pappy" Ray), respective halls of fame for baseball, hockey, basketball, golf, and professional football, and the Iowa Sports Hall of Fame. All of which raises a question: *Why not an Iowa Physician Hall of Fame?*

Several names come readily to mind: Walter Bierring, Arthur Steindler, Ewen MacEwen, J. T. Priestley, Nathan Alcock, Clarence Van Epps, John H. Peck, Lee Hill, George Scanlon — to name a few. A committee of the Iowa Medical Society could be appointed to develop the "ground rules," including qualifications and the procedures for nomination and election. If one suggestion were to be permitted here, it would be that only deceased physicians be eligible — a rather somber rule but one that would mandate a proper historical perspective.

We go one step further: Having been sufficiently impetuous to propose an Iowa Physician Hall of Fame, and sufficiently rash to offer advice as to eligibility, we now presume to nominate a surprise candidate: Edward S. Murray. The surprise lies in the likelihood that few of you will even recognize his name, let alone know of his outstanding accomplishments.

Ed Murray was born in Cedar Rapids in 1909. He died in 1978. He graduated from Coe College (PBK) in 1930, entered the College of Medicine, University of Iowa in 1934, and graduated (AOA) in 1938.

Between 1930-1934 he taught English and mathematics at Roberts College in Istanbul, Turkey, and travelled and worked in China, Moscow, and the Ukraine, during which time he developed a knowledge of Turkish and Slavic languages.

We now pick up the events following his graduation from medicine in 1938: He served an internship and residencies in medicine and bacteriology at Montreal General Hospital. During World War II (having enlisted prior to Pearl Harbor), he served in Iran along the supply route from the Persian Gulf to the Soviet Union. He also served on the Armed Forces Typhus Commission in Egypt, Turkey, Italy, and Germany.

STILL during the war, he parachuted into the highlands of Yugoslavia where he provided medical services to the partisan groups fighting the Nazis.

Following World War II, he earned a Master of Public Health degree from Johns Hopkins. He then became a founding member of a new Department of Microbiology in the Harvard School of Public Health. He did original research in typhus, trachoma, and Rocky Mountain spotted fever — research that took him, at various times, to Yugoslavia, Nicaragua, India, Saudi Arabia, Ethiopia, Portugal, Spain, as well as to the Indian Reservations of the southwestern United States.

He was a member of many scientific organizations, and wrote extensively in his fields of interest. He taught for 31 years at Harvard where his associates affectionately described him as "epidemiologist, humanitarian, gifted teacher."

The foregoing, in rather sketchy form, is the story of a fascinating life, a remarkable doctor — an Iowan worthy of a place in an *Iowa Physician Hall of Fame.* — DANIEL F. CROWLEY, M.D.

Clarence H. Denser, Jr., M.D.

QUESTIONS AND ANSWERS



PRIMARY LEGISLATIVE CONCERNS

The following brief comments are a reminder the Iowa General Assembly resumes deliberations this month. Clarence H. Denser, Jr., M.D. is chairman of the IMS Committee on Legislation. He is a Des Moines pathologist.

The 1984 House of Delegates asked that the subject of medical malpractice tort reform be studied and a report provided for the House in 1985. Can you provide an update on this issue?

Both the Medico-Legal and Legislative Committees considered this subject in 1984. On the recommendation of these committees, the Executive Council directed the Committee on Legislation to draft a comprehensive medical liability tort reform package, with the prospect of having the package introduced as legislation during the 1985 session of the Iowa General Assembly. This activity is occurring now. The Committee on Legislation will evaluate a proposed package January 9, 1985.

What might the future of this issue be in the 1985 General Assembly?

The future of such a proposal depends basically on 3 factors: 1) the commitment of Iowa physicians to explain this issue to their elected Representatives and Senators; 2) an understanding by legislators that this is a problem not only for physicians, but the public as well; and 3) a plaintiff bar active in its opposition to any tort reform proposal. This relates back to the first factor, the willingness of physicians to actively participate in educating legislators on the importance of this issue.

The right to a natural death is another IMS legislative priority. Please comment.

Proposals on this subject have been considered by the Iowa General Assembly in recent years. The Iowa Medical Society believes proposals considered in Iowa thus far have been well intended, but hold the potential for presenting practical, legal, and ethical problems. Enactment of such legislation continues to be a priority among the elderly. The IMS, with the Iowa State Bar Association, has developed a proposal in which competent adults can issue a declaration directing life-sustaining procedures be withheld should they become terminally ill and unable to make treatment decisions. This proposal, entitled, *Right to Decline Life-Sustaining Procedures Act of Iowa*, will be presented to Iowa lawmakers for consideration during the upcoming session. Recently, the General Assembly's Health Care Costs Subcommittee recommended approval of this proposal.

IMS is opposing proposals by certain limited practitioners to expand their practice acts. Which of these proposals is of foremost concern?

Legislation will be introduced during the upcoming session which would allow optom-

(Please turn to page 16)

Angina comes in many forms...

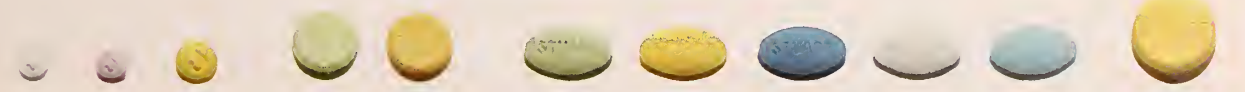


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CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg, for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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QUESTIONS AND ANSWERS — *Continued*

etrists to administer and prescribe certain drugs for therapeutic purposes. The proposal would also allow optometrists to use instruments to remove foreign objects from the eye. IMS is opposed to this legislation. Optometrists have not been adequately trained to enable them to differentially diagnose and treat diseases of the eye. We have been concerned with public statements by optometrists who question the quality of eye care provided by primary care physicians as they attempt to justify this proposal. We intend to work closely with the Iowa Academy of Family Physicians and the Iowa Academy of Ophthalmology in opposition to this proposal.

What other issues of concern to the Society may be considered by the General Assembly in 1985?

We are particularly concerned at this time with the following proposals to: mandate third party coverage of chiropractic services; mandate the appointment of a physician assistant to the Board of Medical Examiners; provide for a restrictive licensure law for X-ray technologists; and mandate the acceptance of limited health care practitioners on hospital medical staffs. The issues just mentioned are ones we are certain will be introduced during the 1985 session. As in the past, we can also expect the unexpected once the session convenes January 14, 1985.

How can Iowa physicians get involved in the 1985 legislative process?

At a minimum, every physician should get to know his or her legislators. Once a good interpersonal relationship is established, communication becomes easy. To get more information on the issues and how to communicate with legislators, contact Tim Gibson or Meredith Olson at IMS headquarters. Those physicians wishing to get involved may choose to participate in the Society's Legislative Contact Physician program. More information may also be obtained by contacting Mr. Gibson or Ms. Olson.

Urinary Incontinence In the Elderly

GLENYS O. WILLIAMS, M.D., IAN M. SMITH, M.D., STANLEY M. HAUGLAND, M.D., and JAMES R. GILSON, M.D.

This is the first of several articles about problems common in the elderly by members of the Iowa Medical Society Subcommittee on Aging and Chronic Illness. Incontinence among nursing home residents could be lessened up to 50% if physicians evaluated patients and followed management guidelines.

THE INCIDENCE of urinary incontinence is surprisingly high, even among well elderly, and it increases with age. Up to 23% of people over 65 living in the community may be incontinent at times[1]; during the stress of an acute illness 25% of old people in bed become temporarily incontinent. Hospital inpatients and residents of institutions have the highest rate of incontinence, 30-55%.[1, 2] It has been established that up to one-third of all episodes of incontinence may be temporary and last only a few weeks.

The authors are members of the Iowa Medical Society Committee on Aging and Chronic Illness. Dr. Williams is associate professor of family practice, The University of Iowa College of Medicine, Iowa City, Iowa. Dr. Smith is professor of internal medicine, The University of Iowa Hospitals and Clinics, Iowa City, Iowa. Dr. Haugland is medical director of the Younker Gerontology Project, Iowa Methodist Medical Center, Des Moines, Iowa. Dr. Gilson is in the private practice of internal medicine (cardiology) in Davenport, Iowa.

EFFECTS OF AGING

Genitourinary Tract. The effects of aging on the genitourinary tract can contribute to diminished bladder control. These effects include 1) decline in tone of the voluntary muscles with resulting loss of strength of the pelvic floor and external sphincters; 2) trabeculation and diverticula formation in the bladder; 3) diminished estrogen effect in women leading to atrophic urethritis and urethral mucosa prolapse, atrophic vaginitis, and atrophic external genitalia; and 4) reduced elasticity of tissues.

Brain. Aging effects on the brain may also contribute to incontinence. Neurons in the bladder center, located in the frontal region, may deteriorate with age or be affected by diseases common in old age (arteriosclerosis, Alzheimer's disease, Parkinson's disease) or by the emotions. As a result, the cortical neurons are unable to inhibit bladder contractions set up by the micturition reflex arc in the sacral segments of the spinal cord. The cord receives impulses from stretch receptors in the bladder wall as the bladder fills. This stimulates the bladder to contract by action of the detrusor muscle. An aged or diseased brain cannot inhibit these contractions and postpone micturition to an appropriate time, so the bladder empties. This is the uninhibited neurogenic bladder. The condition is also called detrusor instability.

General. General effects of aging as well as

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF JANUARY 1985

TABLE I

DRUGS WHICH MAY CAUSE INCONTINENCE

All diuretics	Any cerebrol depressont
Canstipoting ogents	Hypnotics
Cadeine preparatians	Antidepressants
Antichalinergics	Methyldapa
Alcohol	Phenathiozines
Other	Benzodiozepines
Prazasin	Antihistomines
Digitalis	Morphine, meperidine

physical and mental disabilities common in the old may affect continence. Urgency is a common symptom, due to detrusor hyperexcitability, and elderly people may not receive enough warning to reach a toilet in time, particularly if they are disabled by arthritis, poor eyesight, unsteady gait, or muscle weakness. Mental status is important since even mild confusion about the bathroom location, especially in a strange environment such as a hospital or nursing home, can lead to incontinence in somebody who is continent in familiar surroundings.[3] Nursing staff shortages may compound the problem. In addition, many drugs used to treat conditions common in old age may precipitate incontinence (Table I).

TYPES OF INCONTINENCE

The 3 most common types of incontinence in the elderly are 1) uninhibited neurogenic bladder or detrusor instability, 2) overflow incontinence, and 3) stress incontinence. Frequently, elderly women have detrusor instability as well as stress incontinence.[4] The symptoms, physical signs, mechanisms, and causes of the different kinds of incontinence are shown in Table II.

PATIENT ASSESSMENT

A general physical examination should be done with particular attention to the mental status, neurologic function, and abdominal, pelvic, and rectal examinations (Table II). Environmental factors must be assessed. Laboratory workup should include a routine blood profile with special attention to glucose, blood urea nitrogen, electrolytes, and calcium. Urinalysis should include microscopic evaluation

TABLE II

MAIN CAUSES OF INCONTINENCE IN ELDERLY SHOWING SYMPTOMS, SIGNS, AND MECHANISMS

*Symptams**	*Physicol Signs*	*Diognasis*	*Mechonisms*	Couses
Urgency, frequency, nacturia, vaid smoll amaunts Large volume is last	Anormal mental status Neuralagic abnarmolity Pelvic pathalagy, e.g., infected urine, fecal impactian, uterine pralapse, benign prostatic hypertraphy	Uninhibited neuragenic bladder Detrusar instability aggravated by local pathalogy	Detrusor cantractians ore uninhibited ond overcome urethral resistance	CNS inhibitian defective due ta frantal lobe diseose ar aging effect Afferent pathways hyperexcitable Micturitian reflex decanditianed
Na sensatian af need ta urinate Urinory flaw rote slaw History af diabetes	Abdaminal exom: palpable, tender blodder, laaded rectum ond calan Neurolagic abnarmality, e.g., spinol cord lesian, peripheral neuropothy	Overflow incontinence	Blodder pressure insufficient ta avercame introurethrol pressure	Obstruction ta bladder autflaw Defective sensatian Inadequate detrusar muscle; otanic bladder
Incantinence coused by caughing, laughing, etc. Inobility ta stop urine flaw	Atraphic vaginitis Inflammatian af urethra Uterine pralapse Positive Banney's test (twa fingers ploced on urethra prevent urine leakage when stroining)	Stress incantinence due to sphincter weakness	Blodder pressure greater than intraurethral pressure	Estragen lack in wamen Pelvic and urethral muscle weakness GU surgery Severe neurapathy Infectian

* Symptams are aften best demanstroted an an incontinence chart kept by the potient ar nurse.

with culture if indicated. Measurement of residual urine after voiding can be helpful to demonstrate obstruction. An intravenous pyelogram may be considered. The usefulness of urodynamic studies in the elderly has been questioned because there is overlap between the normal and the abnormal. Cystometry, urethral pressure profiles, and urine flow studies may be particularly useful in men. If the diagnosis is not obvious from the initial assessment, urodynamic studies should be ordered. Referral to a Continence Clinic may be considered.*

MANAGEMENT

Management of incontinence in the elderly should include, in order: 1) discontinuation of precipitating drugs; 2) attention to the environment (*e.g.*, bed rails, bedside commode, nightlight); 3) treatment of existing conditions (diabetes, urinary tract infection, fecal impaction, surgically correctable conditions); 4) bladder training, which involves emptying the bladder every two hours initially, with reminders if necessary, then gradually increasing the time interval, so that the patient must try to delay urinating; 5) drug treatment (see Table III); 6) use of protective garments; and, finally, 7) use of mechanical devices (condom urinal systems, catheters).

Protective garments should only be used when all other methods have failed, and must meet the following criteria.[5] 1) The patient must be separated from the urine, otherwise the bed or the clothing is being treated, not the patient. 2) The patient should remain warm and dry. 3) The method must be aesthetically acceptable to the patient and not represent a regression to childhood. 4) Patients should be able to manage their incontinence themselves to preserve some self-respect.

Disposable incontinence pads are obtainable from medical equipment firms and pharmacies, and in future may reach supermarket shelves. Adult versions of the baby diaper, or briefs, allow wetting of the skin over a large area. Reusable pants with reusable or disposable pads are preferable. In some the pad is inserted in a pocket and can be changed without removing the pants. When pants are made of water-repellent material, the wet skin area is reduced to that beneath the pad. Some superabsorbent pads also inhibit odor.

Disposable incontinence pads for the bed have improved recently. In particular, the Kylie sheet,* a launderable drawsheet, is excel-

(Please turn to page 20)

TABLE III
DRUG TREATMENT OF URINARY INCONTINENCE

Diagnosis	*Gool of Drug Theropy*	*Drug Regimen*
Detrusor instobility (uninhibited neurogenic blodder)	Inhibit detrusor controctions Increose urethrol sphincter tone	Imipromine (10-25 mg tid)
Overflow incontinence	Stimulote detrusor controction Reduce outlet pressure	Phenoxybenzomine (10 mg qd)
Stress incontinence	Increose output pressure by increosing urethrol tone	1. Imipromine (10-25 mg tid) 2. Topicol estrogens 3. Phenylproponolomine (25 mg bid)

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* University of Michigan Continence Program, 400 N. Ingalls, Room 2271-R, Ann Arbor, MI 48109, (313) 763-0389. Slide/tape presentations are available.

† Kylie sheets are available from Nicholas Laboratories, Inc., Healthcare Products Division, Route 662 North, Douglassville, PA 19518, (215) 385-3041.

lent. It preserves a dry barrier between the patient and the urine and can absorb large quantities of urine (wet weight 8½ lb.). Bedding changes are reduced, patients are more comfortable, and management costs are reduced.[6]

There is evidence that nursing home patients with urinary incontinence are often not evaluated by their physicians.[2] It has been estimated that careful evaluation and management can lessen incontinence in one-third to one-half of elderly nursing home residents and cure it completely in a few. The Iowa Medical Society Committee on Aging and Chronic Illness hopes that this article will stimulate physicians to take an interest in incontinence in all elderly patients and adopt a positive attitude toward its management. The results could be far-reaching. Nurses and nurses' aides will spend less time changing patients and beds, the costs of long-term care will be reduced, and, most importantly, many patients and their families will be freed from a distressing problem.

The following books are suggested reading: 1) Willington, F. L. (editor): *Incontinence in the Elderly*, Academic Press, Inc., New York, 1976; 2) Mandelstam, D.: *Incontinence. A Guide to the Understanding and Management of a Very Common Complaint*. Heinemann Health Books, London, 1977 (distributed by International Ideas Inc., 1627 Spruce Street, Philadelphia, PA 19103). The former is recommended for the clinician and the latter for patients, families, and physicians.

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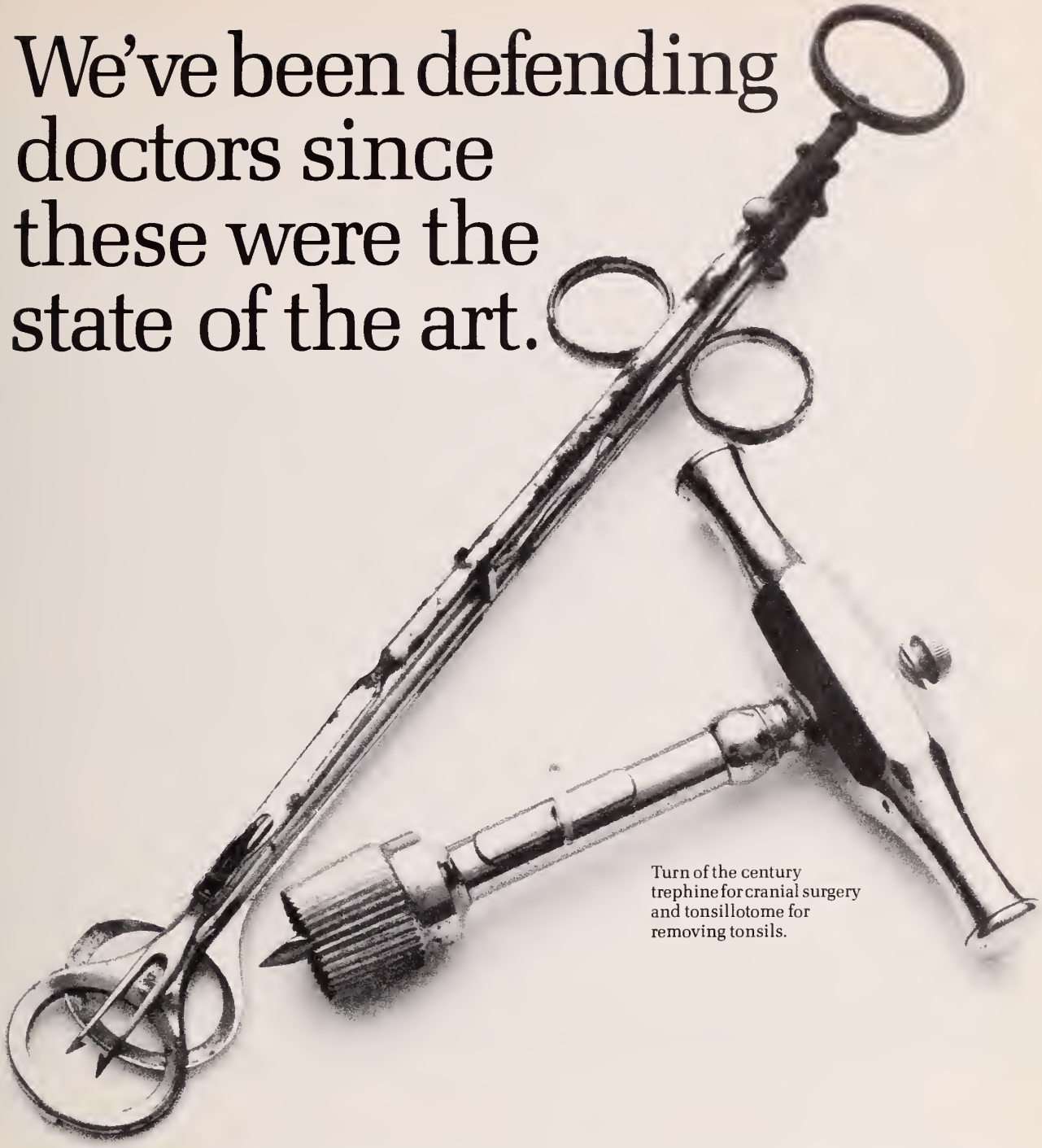
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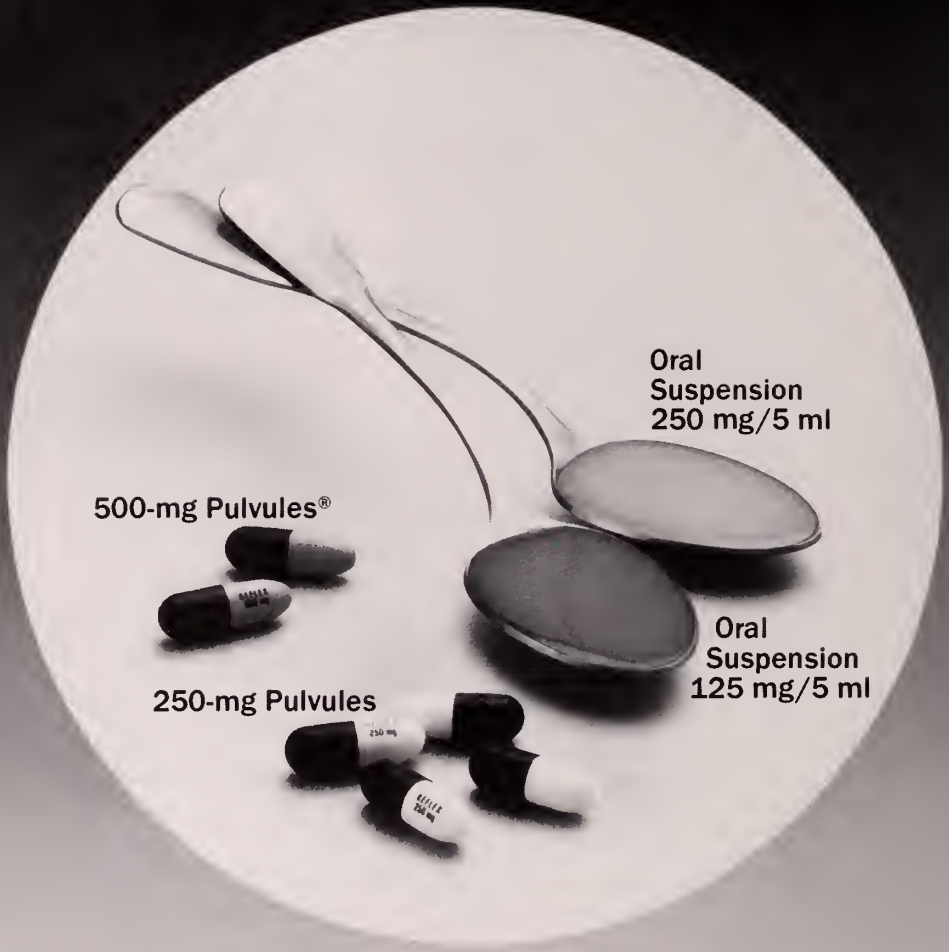
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



TAKING STOCK

"TAKING STOCK" often refers to something we have learned to do at the beginning of a new year. Whether the year be defined as calendar, fiscal, tax, academic, religious, or whatever, with it often comes the compulsion to look both backward and forward and wonder how things are going. That impulse comes over me, too, from time to time. Now, for instance, in relation to this column.

At irregular intervals, I wonder whether anybody besides the copy editor reads this material. But then, often under the most surprising circumstances, someone reveals he's read something here, and offers me some reaction. That is always nice to have. One of those reactions, in fact, comes from the editor who, at my periodic offer to quit doing this, has declined my offer. (Thanks, Editor — I guess.)

Perhaps it's because of the scientific or quantitative aspect of medical work, plus the general social push for accountability (preferably numerical), that I pondered to judge the impact of this column in some quantitative fashion. It happened that the piece for December 1983 discussed the increasing cost to students of medical education and it pleaded for contributions to the Iowa Medical Foundation (Scanlon Medical Student Loan Fund). It occurred to me that the record of contributions from January through June of the previous year, plus what would happen in the corresponding months of 1984 would provide a nice experiment. The editor obtained the necessary information. Most of the Iowa Medical Foundation contributions are from IMS members who make voluntary contributions when they send their annual dues. From January 1 to June 30 of 1983, 309 members contributed $10,805. In the corresponding six months of 1984, just after my appeal appeared in mid-December of 1983, 443 contributors sent $15,490.

Since you are as quantitative-minded as I, let me save you the trouble of pulling out your pocket calculator. That represents an increase of 43% in both number of contributors and dollars. Can you imagine both my astonishment and delight at having produced such an effect? 43%! I never dreamed I had such a talent for fund-raising among the masses. Visions danced in my head of selling (lucratively, of course) my services to charitable organizations, professional groups, political parties, perhaps even the state and federal governments.

"When it comes to measuring people in their workday environments the process grows exceedingly difficult, and the drawing of logical and defensible conclusions becomes enormously complex and suspect."

But then the visions faded as I recognized that my little experiment was flawed. I indeed had arranged a "comparison group" (1984 with 1983) but, sadly, had overlooked the need to "control" many other important variables, such as the increasing membership in the IMS, appeals from other sources, changes in the general economy, etc. I further realized that the opportunity to measure my effectiveness with such a tool was about as impossible to do well as to demonstrate the effectiveness of a particular effort in continuing education. How comforting it must be to conduct laboratory research with bacteria or inbred strains of lit-

(Please turn to page 34)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

DRUG THERAPY OF THE HYPERLIPIDEMIAS

The hyperlipidemias are a heterogeneous group of plasma lipoprotein disorders of major clinical significance. Biochemical investigation of these disorders has led to intricate characterization of relevant metabolic faults, yet quite satisfactory clinical identification is possible with simple diagnostic algorithms.[1] The most urgent indication for clinical recognition of hyperlipidemic states is to identify patients who are at risk either for acceleration of atherogenesis in lipoprotein disorders involving cholesterol metabolism or for pancreatitis in disorders causing massive triglyceridemia. Effective preventive treatment of each of these 2 conditions requires regimens that include nonpharmacologic features of life-style, principally diet and physical activity, that are designed to reduce risk. If nonpharmacologic measures are inadequate and drug therapy is undertaken, it is to be expected that the indication for drug intervention will continue indefinitely and the question of late toxicity will be a continuing concern.

HYPERLIPIDEMIC CAUSES OF ACCELERATED ATHEROGENESIS

Atherosclerosis occurs at an increased rate in the following settings: *high levels of low-density lipoprotein (LDL)*, identified in clinical laboratories as increased LDL cholesterol or inferred from high levels of total plasma cholesterol with normal triglyceride levels; *low levels of high-density lipoprotein (HDL)*, identified as decreased HDL cholesterol in clinical laboratories and considered among the hyperlipidemias because LDL is elevated relative to the decreased HDL; *familial dysbetalipoproteinemia* (also called Type III hyperlipoproteinemia), a condition in which both cholesterol and triglyceride are increased because of excess catabolic remnants of very low-density lipoprotein (VLDL) and chylomicrons (CMs) and characterized by cholesterol enrichment of the apparent VLDL density class in clinical laboratories; and *atherogenic subsets of hypertriglyceridemia*.

Triglycerides are the principal lipid of VLDL and CMs and per se carry no intrinsic risk of atherosclerosis.[2] To a varying extent, however, VLDL contains apoprotein B. Apoprotein B is the major protein in LDL and the remnant particles of dysbetalipoproteinemia; and

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Editor's Note: The best treatment of patients with hypercholesterolemia remains controversial. The 2 large trials comparing clofibrate and cholestyramine with placebo in patients with hypercholesterolemia did not show that drug treatment prolonged life. In fact, clofibrate increased noncardiovascular mortality and was therefore removed from the market in some states (e.g., Germany). Both drugs, however, slightly decreased cardiovascular morbidity and mortality. The risks and cost of drug therapy must be weighed against the possible benefit in carefully selected patients. Dr. Armstrong, in the following article, propounds his views on the treatment of hypercholesterolemia and other hyperlipidemias — some of which require drug therapy.

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

apoprotein B serves to deliver cholesterol to tissues, including the arterial wall. Triglyceridemias in which VLDL is rich in apoprotein B are atherogenic.[3] In the absence of direct measurement of apoprotein B in hypertriglyceridemic patients, personal and family history may be used to decide whether an atherogenic subset of VLDL is present. HDL apoproteins accept cholesterol and cause a net removal from tissue and in model systems.[4] Decreased HDL in relation to LDL is an atherogenic risk factor,[5] but low HDL levels in hypertriglyceridemic states are compatible with little atherogenesis unless apoprotein B is increased in the VLDL particles.

HYPERTRIGLYCERIDEMIA AND PANCREATITIS

Pancreatitis and acute abdominal crises lacking diagnostic features of pancreatitis are caused by extreme hypertriglyceridemic states. At The University of Iowa Hospitals and Clinics, we have not seen this emergency condition caused by triglyceride levels that are less than 2,000 mg/dl; usually much higher triglyceride levels are found. In addition to increases in VLDL, CMs are characteristically increased in hypertriglyceridemia associated with pancreatitis. Because of wide daily fluctuations in triglyceride levels in hypertriglyceridemic patients, levels at or exceeding 1,000 mg/dl in fasted patients are an indication for preventive triglyceride reduction with drugs. Triglyceride levels clearly below 1,000 mg/dl require only observation and nonpharmacologic preventive measures unless there is evidence of an atherogenic subset of hypertriglyceridemia.

CONSIDERATIONS IN DRUG SELECTION

By far the most common clinical condition requiring consideration of drug use is hypercholesterolemia, and the most common treatment objective is reduction of high LDL levels.

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DRUG THERAPY REVIEW

(Continued from page 27)

Low HDL levels with otherwise normal lipid values are quite infrequent, and there is as yet no evidence that drug-induced increases in HDL levels repair the physiologic defect.[8] Most workers provisionally consider that drug-induced increases in HDL levels are antiatherogenic, pending evidence that the drug-induced HDL increment is a metabolically active fraction. Drug-induced decreases in HDL levels are similarly considered possibly atherogenic; pending further evidence, this is a prudent position. In familial dysbetalipoproteinemia and atherogenic subsets of triglyceridemia, the pharmacologic agents selected should cause significant decreases in the VLDL fraction, as determined by clinical laboratories, which will result in reduced triglyceride and cholesterol levels.

When the treatment objective is to prevent pancreatitis, agents selected should profoundly decrease VLDL; pharmacologic reduction of CMs is not obtainable by oral medication.

Drugs available and recommended work by one of the following modes of action: (1) *increased LDL catabolism* causing plasma LDL reduction after bile salt depletion and hepatic LDL receptor enhancement, (2) *decreased VLDL and LDL synthesis*, (3) *increased VLDL clearance*, and (4) *decreased hepatic cholesterol synthesis*. Table 1 lists the major antilipidemic agents by mode of action, dose range, and the average dose used at The University of Iowa.

DETAILS OF DRUG USE, TOXICITY, AND SIDE EFFECTS

Colestipol and cholestyramine are insoluble ion-exchange resins that for clinical purposes are identical in effectiveness at the doses listed in Table 1. Both drugs have a similar degree of side effects, but some patients tolerate one resin better than the other. The disagreeable sandy texture of the oral suspension is decreased by soaking in fruit juice, carbonated beverage, or applesauce overnight. The major side effect is constipation caused by decrease of the effect of bile acids on water absorption in the colon. Psyllium mucilloid or dioctyl sodium sulfosuccinate in the usual doses will ordinarily suffice to correct constipation. The ion-binding properties of both colestipol and cholestyramine may interfere with absorption of phenylbutazone, cholorothiazide, tetracycline, warfarin, and thyroid and digitalis preparations. The indirect effect of these nonabsorbed resins on hepatic metabolism often causes an increase in VLDL level with rises in plasma triglycerides, but triglyceride levels are rarely so high as to put the patient at risk for pancreatitis. The resins are, in the main, safe and potent agents for decreasing LDL and increasing HDL.

Nicotinic Acid. This vitamin must be given in pharmacologic doses to reduce plasma lipids. The long record of use of nicotinic acid as an effective and generally safe agent is matched only by its troublesome side effects. Nearly all patients notice intense flushing with or without pruritis occurring shortly after ingestion and lasting for 30 to 120 minutes. This is mitigated by taking the drug TID at the end of a meal; in addition, 1 aspirin tablet (325 mg) one-half hour before each dose of nicotinic acid is said to block the flushing response, but aspirin has shown marginal effectiveness at The University of Iowa. In about 2 weeks, flushing decreases in most patients to a more tolerable level. Nicotinamide is sometimes substituted for nicotinic acid by sympathetic pharmacists; the flushing is abolished but the amide form is without any effect on plasma lipids. Timed-release preparations may decrease the flushing, but most patients seem to prefer dealing with this side effect at a more predictable time. Epigastric distress is the next most common symptom and is often the dose-limiting factor. Liver function tests typically show mild to moderate alterations, but liver damage is rare. Glucose intolerance and gout may also occur rarely. Acanthosis nigricans occurs rarely and is reversible. The major concerns, in addition to dealing with early nonspecific effects in using nicotinic acid, are to determine that liver function does not deteriorate and that diabetes and gout are not induced. A history of peptic ulcer is a relative contraindication to its use, and nicotinic acid should not be given in the presence of active ulcer.

Acceptance of nicotinic acid is increased if the starting dose is 125 mg (½ tablet of 250 mg) TID, with increases during several weeks to about 750 mg TID. This is close to the maximal tolerable dose for many patients, and further increases should not be made in the face of

increasing symptoms. Nicotinic acid is almost always used as an adjunctive drug because of its side effects. It is quite safe and it is the least expensive of the drugs used to treat hyperlipidemias. The problems associated with its use are well-defined, and it is worth consideration as a primary agent to lower either high VLDL or LDL levels in patients who tolerate the side effects. It is the agent of choice for the drug treatment of low HDL levels.

Clofibrate. Ethyl-chloro-phenoxyisobutyrate is widely used in the treatment of hyperlipidemia. In a large prospective study, subjects given this agent had a higher mortality rate from noncardiovascular causes than subjects given placebo.[13] The relevance of this finding to the treatment of the individual patient is not clear. Specific problems may be associated with clofibrate therapy, however. There is an increased occurrence of gallstones, cholecystitis, and possibly cancer. The anticoagulant action of coumadin is increased by about 50 percent. Myalgias, arthralgias, skin rash, and hepatitis may occur. Reversible impotence is occasionally seen. Clofibrate is excreted in the urine, and in renal failure the dose may have to be greatly reduced. A severe myositis may be rarely seen; it is more likely in patients who have renal failure.

The drug reduces VLDL and moderately elevates HDL. It is used principally in hypertriglyceridemic states. The standard daily dose is 1 g (2 capsules) PO BID. This dose can often be reduced with no decrease in antilipidemic action.

Gemfibrozil. Gemfibrozil is a phenoxy acid derivative with a structure and mechanism of action similar to those of clofibrate.[9] It is not established how the side effects compare to those of clofibrate. It should be used with considerable caution in patients with hepatic or renal dysfunction. Like clofibrate, it potentiates the action of warfarin. At standard dose, it decreases VLDL and raises HDL more than clofibrate and it often lowers LDL. Gemfibrozil is usually very effective in massive triglyceridemia. It may be used as an alternative to nicotinic acid in hyperlipidemic disorders involving cholesterol metabolism. The standard dose is 600 mg (2 capsules) PO BID.

Probucol. Probucol is a crystalline lipophilic biphenol compound that lowers LDL, may lower HDL, and has no effect on VLDL.[10-12] It is poorly absorbed from the gut and tends to accumulate in adipose tissue with prolonged administration. Side effects are usually minimal and transient and include diarrhea, nausea, and abdominal discomfort. The agent has a place in the treatment of increased LDL conditions, but patients given probucol must be observed for reduction of HDL as well. The occurrence of low HDL levels is an indication for further surveillance rather than discontinuation, since there is evidence that in some patients the reduction in HDL occurs in a noncritical subfraction.[12] Furthermore, at The University of Iowa and elsewhere, resorption of xanthomas has occurred in hypercholesterolemic patients given probucol alone.

TABLE 1
MAJOR ANTIHYPERLIPIDEMIC DRUGS

Mode of Action*	Agent	Total Daily Dose (Range)	Most Frequent Daily Dose†
Increased LDL catabolism[6]	Colestipol	15-30 g	20 g
	Cholestyromine	8-24 g	16 g
Decreased VLDL, LDL synthesis[7]	Nicotinic acid	0.75-6 g	2 g
Increased VLDL cleorance[8, 9]	Clofibrote	1-2 g	1 g
	Gemfibrozil	600-1,200 mg	1,200 mg
Decreased cholesterol synthesis[10]	Probucol	Fixed dose	1 g

* Superscripts in this column indicate citations in references.

† Most common recommended dose at The University of Iowa Lipid Disorders Clinic.

Preferred agents and combinations. The relative efficacy of these agents in normalizing lipids is not established precisely. Clinical experience suggests the following rank orders of efficacy. In disorders involving high LDL, relative efficacy is cholestyramine = colestipol > nicotinic acid > probucol > gemfibrozil. In low HDL with normal triglyceride levels, relative efficacy is nicotinic acid ≥ gemfibrozil > clofibrate. In disorders involving high VLDL, relative efficacy is nicotinic acid = gemfibrozil > clofibrate. The combination bile acid sequestrant-nicotinic acid is widely used in resistant hypercholesterolemia. But when nicotinic acid is not tolerated, gemfibrozil or probucol may be tried. Usually single agents are sufficient for

(Please turn to page 30)

TABLE 2

COST OF LIPID-LOWERING DRUGS

Agent	Proprietary Name	How Supplied	Price
Calestipol	Colestid®	bulk powder, 500 g can	$48
		5 g pockets, box of 30	$18
Cholestyramine	Questron®	bulk powder, 378 g con	$32
		bulk powder, 378 g con, 12 cons	$331
		4 g pockets, box of 50	$41
Nicotinic Acid	Nicolor®	0.5 g, 100 toblets	$6
Nicotinic Acid,		0.5 g, 1,000 toblets	$15
timed-release	Nicobid®	0.5 g, 100 toblets	$29
Clofibrote	Atromid®	0.5 g, 100 copsules	$16
Gemfibrozil	Lopid®	300 mg, 100 copsules	$27
Probucol	Lorelco®	250 mg, 100 toblets	$31

treating low HDL levels in normotriglyceridemic patients and for decreasing VLDL in massive triglyceridemia.

COST

Table 2 shows the current price of the drugs discussed. The price figures are averages of prices paid in July 1984 by patients at The University of Iowa Pharmacy and 2 Iowa City chain-store pharmacies.

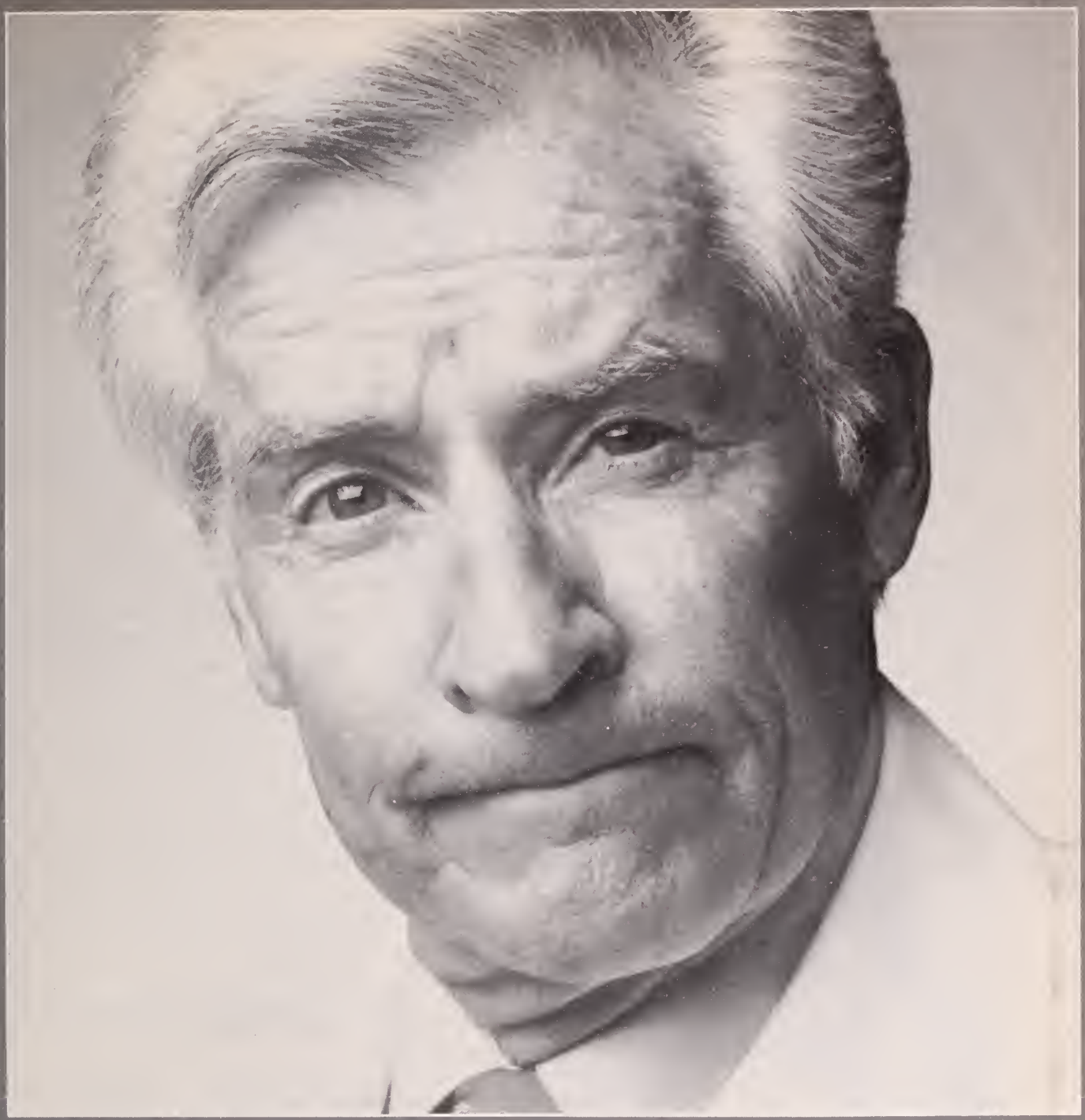
Bile acid sequestrants purchased as the bulk powder have a cost per g of 9¢ for colestipol and 17¢ for cholestyramine. At daily doses of 20 g and 16 g, respectively, colestipol costs $690 per year and cholestyramine cost $970 per year. These resins may be purchased in 4 or 5 g units for more convenient use away from home at a greater cost. Nicotinic acid purchased in large quantity has a cost of $22 per year at a daily dose of 2 g. The low cost of nicotinic acid is partly offset during the early months of treatment by the need for laboratory tests to check for possible adverse metabolic changes. The cost of drug treatment of a hypercholesterolemic patient who requires both a bile acid sequestrant and an additional agent for reduction of cholesterol levels is in the range $800-$1,400 per year. The cost of treating massive triglyceridemia with gemfibrozil at standard dose is $400 per year.

CURRENT STATUS OF DRUGS IN ATHEROGENIC HYPERLIPIDEMIAS

The agents described cause major corrections of lipid abnormalities. The changes toward normal are sustained during years of drug treatment. Angiographic studies show retarded progression of atherosclerosis in treated patients in both the coronary[14] and the femoral[15] beds. Mortality from coronary artery disease has been shown to be effectively reduced in patients treated with cholestyramine, although all-causes mortality was not.[16, 17] If it can be shown that the long-term side effects of antilipidemic agents do not contribute unduly to noncardiac causes of morbidity and mortality, appropriate drug therapy of atherogenic hyperlipidemias may change from a recommended option to standard practice. — MARK L. ARMSTRONG, M.D., *Cardiology Division, Department of Internal Medicine.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

CERTIFICATION OF OUTPATIENT DIABETES EDUCATION PROGRAMS

Diabetes is a serious and common disease treated directly or indirectly in practically every health care facility in the nation, regardless of size or location. Major strides have been made in the treatment of diabetes during the last decade as a result of biomedical research, technological advances, and improved application of available knowledge and resources.

It has been recognized education for diabetes self-management is a fundamental component needed for quality treatment of individuals with the disease. National Standards for Diabetes Patient Education Programs were prepared as a collaborative effort by the American Diabetes Association, American Association of Diabetes Educators, Centers for Disease Control, Diabetes Research and Training Centers, International Diabetes Center, Juvenile Diabetes Foundation and National Diabetes Information Clearinghouse. The standards were endorsed by the National Diabetes Advisory Board and released November, 1983. The goal of the joint committee was to set standards rigorous enough to be acceptable to the diabetes community, yet flexible enough to be practical for the primary care community.

The 1984 Iowa Legislative Session passed Senate File 2262 requiring health care insurance providers to offer coverage under group policies for Diabetes Outpatient Self Management Education Programs. The Iowa State Department of Health (ISDH) was directed to develop standards for certification, in consultation with the American Diabetes Association, Iowa Affiliate. The bill excluded Title XVIII and XIX. The above mentioned National Standards served as a resource for the development of the Iowa Standards.

The Department filed the Notice of Intended Action (Proposed Rule) on October 19, 1984. The Rule defined the standards for Outpatient Diabetes Education Programs and the certification procedures. It is estimated the Rule will become final the latter part of January, 1985, following all required approvals. ISDH will begin accepting requests for certification at that time. There will be no fee required for programs requesting certification, and recertification will be done annually, on the anniversary date.

Programs applying for certification will need to provide ISDH with a needs assessment which includes target population, estimated caseload and the frequency of their program. Goals and objectives, a patient referral mechanism and a means of coordinating within the community must be defined. A program evaluation design must be included with the application.

Specific curriculum design for each program must be outlined, meeting the minimum time requirements and topics as identified in the Iowa Standards. The program must provide 13 to 14 hours of didactic instruction plus individual consultation to meet the participants' needs. The topic areas to be included in the curriculum design are: an overview of diabetes, self-blood monitoring, use of insulin and oral hypoglycemics, nutritional management, pattern control, sick day management, hyperglycemia and DKA, hypoglycemia, personal hygiene, chronic complications, and coping with feelings about having diabetes.

(Please turn to page 34)

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STATE DEPARTMENT/PUBLIC HEALTH

(Continued from page 32)

Minimum qualifications for program staff are delineated. Programs must be directed by a physician who provides a minimum of 2 hours of instruction. The physician would also serve as a liaison with the medical community. Additional program staff required in the standards are a Registered Nurse and a Registered Dietician. A program coordinator that monitors day to day management of program activities may be any required staff members. Additional staff members may be added as the program format indicates. Recent participation in a diabetes education program for health professionals is necessary for all required staff members. Regular continued education with diabetes management or diabetes education is expected of required staff.

The Proposed Rules for Outpatient Diabetes Education Programs may be obtained by requesting Iowa Administrative Bulletin, November 7, 1984, from Iowa Printing Division, Grimes State Office Building, Des Moines, Iowa 50319-0075 or by calling 515/281-5231. The fee is $4.16. Additional information is available from ISDH staff, David Fries, 515/281-7053 or Barbara Thiede 515/281-6801.

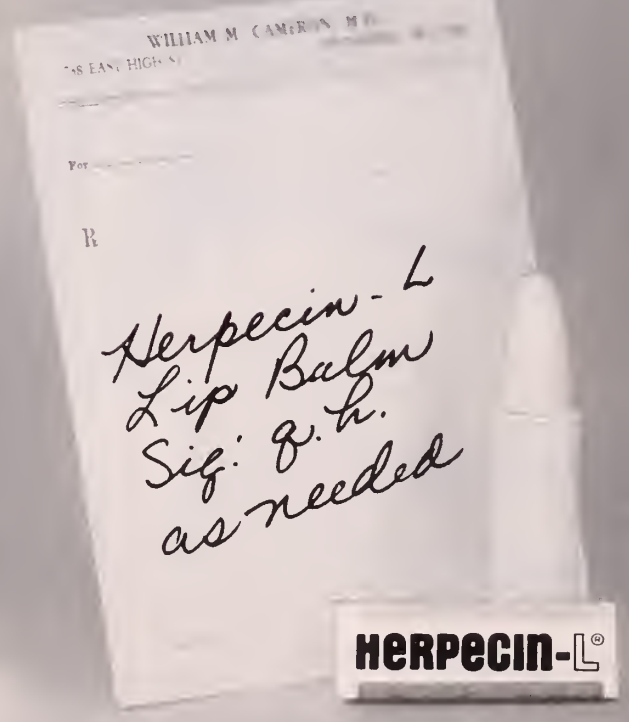
OUR MAN IN EDUCATION

(Continued from page 25)

termate mice in rooms where nutrients, temperature, and everything else can be truly well controlled. When it comes to measuring people in their workday environments, the process grows exceedingly difficult, and the drawing of logical and defensible conclusions becomes enormously complex and suspect.

So where does that lead me? For one thing, I'm delighted that more IMS members made contributions to the Scanlon Fund in behalf of medical student loans, and I heartily urge more and better philanthropy of that kind. But when it comes to assessing this column and its accomplishments, I fear I have yet to find an indicator of decent quality. Perhaps, if I were to ask the editor to pay me for writing this piece, I might learn something unambiguous, and fast. But then again, maybe I don't really want to know that badly.

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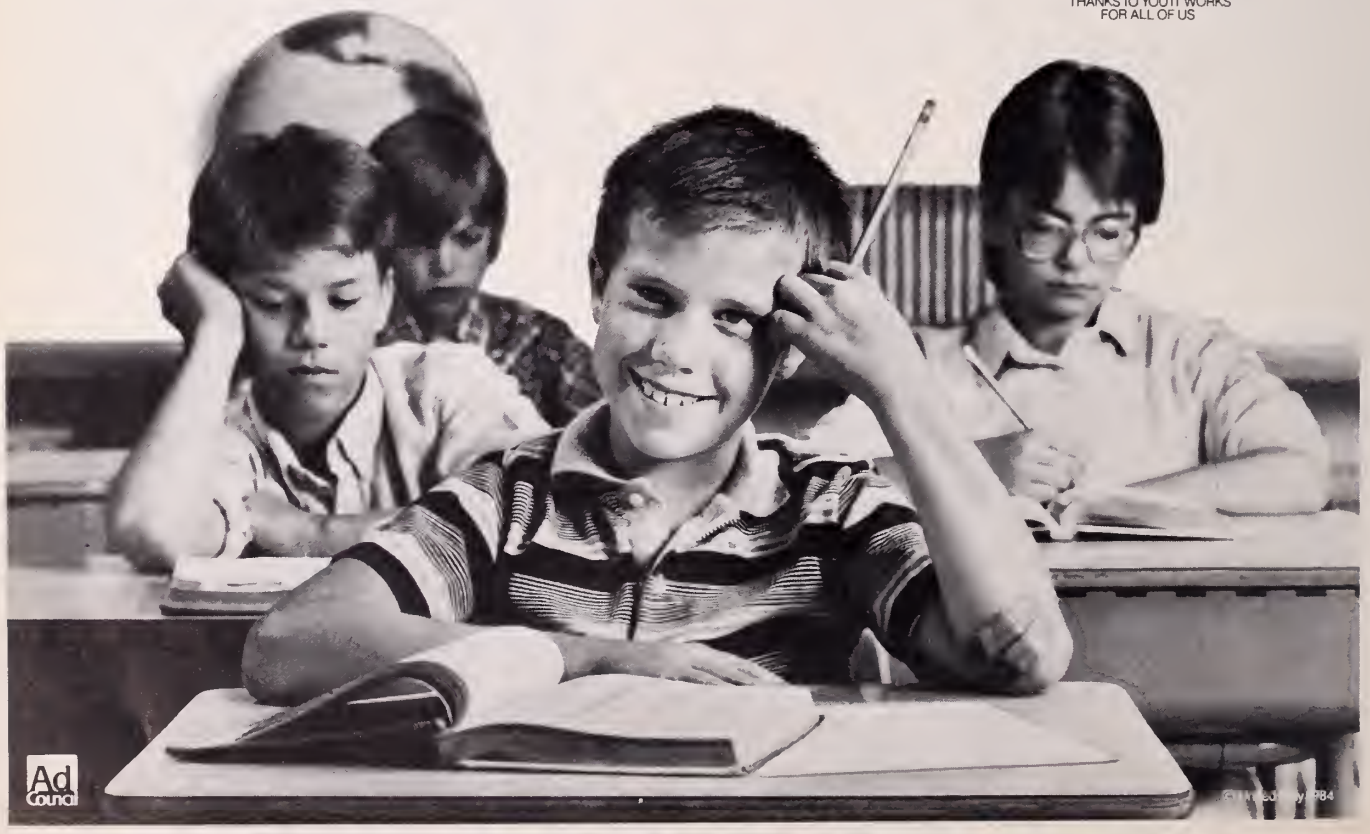
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November 1984 Morbidity Report

Disease	Nav. 1984 Total	1984 to Date	1983 to Date	Most Nav. Coses Reported From These Counties
Amebiosis	4	64	36	Johnson, Polk
Brucellosis	0	2	5	
Chickenpox	361	6878	5824	Scottered
Compylobocter	42	314	322	Scottered
Cytomegalovirus	1	12	11	Boone
Eatan's Agent infectian	1	34	112	Tomo
Encepholitis, virol	2	31	57	Horrisan, Scatt
Erythemo infectiosum	0	52	27	
Gastraenteritis (GIV)	1723	12310	11419	Scottered
Giardiasis	41	368	306	Scottered
Hepatitis, A	9	55	28	Scattered
Hepotitis, B	14	98	81	Scattered
Hepotitis, Non A-B	5	19	38	Scottered
Hepotitis type unspecified	1	10	12	Polo Alto
Herpes Simplex	85	867	918	Scottered
Herpes Zaster	0	2	6	
Histoplosmosis	2	19	16	Polk, Pottowattamie
Infectiaus mononucleosis	28	148	184	Scattered
Influenza, lob canfirmed	0	176	207	
Influenza-like illness (URI)	3419	37758	37701	Scattered
Legionellosis	1	4	6	Johnsan
Malorio	0	2	4	
Meningitis oseptic	6	60	140	Linn, Polk, Scott
bocteriol	12	111	141	Scottered
meningococcol	0	22	19	
Mumps	2	25	45	Scott, Woshington
Pertussis	1	13	6	Pottowottomie
Rabies in onimals	6	140	192	Scottered
Reye Syndrome	0	2	2	
Rheumatic Fever	0	0	2	
Rubella (German meosles)	0	1	0	
Meosles	0	0	0	
Salmonellosis	33	239	319	Scottered
Shigellosis	13	97	64	Scottered
Toxic Shock Syndrome	0	13	14	
Tuberculosis				
totol ill	7	62	60	Scottered
bact. pos.	6	56	42	Scottered
Typhoid Fever	0	0	0	
Venereol diseases:				
Ganorrhea	496	4197	4180	Scattered
Syphilis	0	11	22	

Other Non-Repartoble Diseases: Chlomydio — 3, Johnsan, 1, Black Hawk; Clonorchiasis — 2, Story, 2, Muscatine, 1, Clinton, 2, Johnson; Ureoplosmo Ureolyticum — 1, Block Hawk, 2, Polk, 3, Jacksan, 1, Tamo, 1, Appanoose, 1, Lee, 1, Linn, 1 Muscotine; Trichurius Trichuria — 1, Story.

RECENT BOOKS

Warren, James V. and Subak-Sharpe, Genell J., 1984, *Surviving Your Heart Attack,* Doubleday and Co., Garden City, N. Y., $13.95. This book is written for heart attack victims. It is based on a program promoted by Duke University Preventative Approach to Cardiology (DUPAC). It explains how the heart attack victim can enjoy a good quality of life. Physicians can recommend the book to patients with cardiac disease.

Stevens, Laura J., 1984, *New Way to Sugar Free Recipes,* Doubleday and Co., Garden City, N. Y., $3.50. This is a compact, paperback collection of over 125 recipes using Equal® brand (aspartame) sweetener.

Paley, Vivian Gussin, 1984, *Boys and Girls: Superheroes in the Doll Corner,* University of Chicago Press, Chicago, Ill., $12.50. This book about kindergarten children is written by an elementary school teacher with 25 years experience.

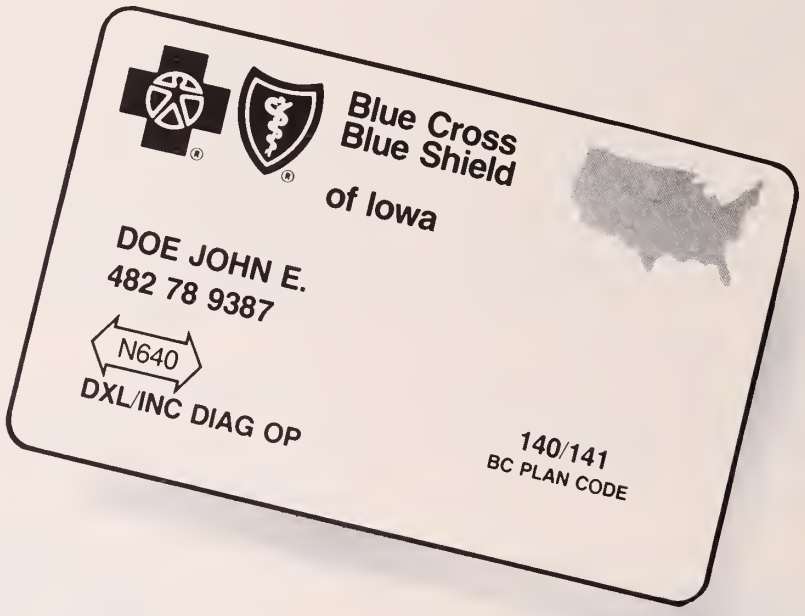
Young, Clara-Beth, 1984, *The Low Fat, Low Cholesterol Diet,* Doubleday and Co., Garden City, N. Y., $17.95. This recipe book is restricted to low fat, low cholesterol foods.

Hagerman, Randi Jenssen and McBogg, Pamela McKenzie, 1983, *The Fragile X Syndrome,* Spectra Publishing Co., Inc., Dillon, Colorado, $16.95 (soft-cover), $26.45 (hard-cover). An excellent summary of what is known about the diagnosis, biochemistry, and intervention of this widely underdiagnosed familial cause of mental retardation.

Pepper, Claude, 1984, *Ask Claude Pepper,* Doubleday and Co., Garden City, N. Y., $7.95. Congressman Pepper answers numerous questions about Social Security and other aspects of the lifestyle of the elderly.

Neville, Helen, and Halaby, Mona, 1984, *No Fault Parenting,* Facts on File Publications, New York, N. Y., $17.95. Over 400 pages of approaches to problems parents might have with children under 6 years of age. Key words are indicated in discussing the discipline of small children — be fair, firm, friendly, fast and consistent!

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Paul Ferguson, Lake City, is president-elect of the Iowa Division of the American Cancer Society. Dr. Ferguson also received an award certificate and pin for 20 years of service to the Iowa division. . . . **Dr. Stephen Zumbrun** has been appointed medical director of cardiology at the Marion Health Center in Sioux City. Dr. Zumbrun received the M.D. degree at Indiana University; completed his internal medicine residency at the University of Oregon Hospitals in Portland; and his cardiology residency at Brooke Army Medical Center in San Antonio, Texas. . . . **Dr. Deepak Midha** has joined the Webster City Medical Clinic. Dr. Midha formerly practiced in Creston. . . . **Dr. Eugene P. Cassidy** has joined the Pathology Department at Marshalltown Community Hospital. Dr. Cassidy received the M.D. degree and served his pathology residency at Yale Medical School in Connecticut. He was formerly associated with Scripps Memorial Hospitals in Encinitas and LaJolla, California. . . . **Dr. Garry L. Smith** has joined the staff of Council Bluffs Surgical Associates. Dr. Smith received the M.D. degree at Cornell University and served his surgery residency at New York Hospital and Cornell Medical Center in New York City. . . . **Dr. Anthony M. Romano,** Council Bluffs, has been honored by Mercy Hospital for 25 years of service to the community and as medical staff member.

(Please turn to page 38)

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Dr. Anne L. Voigts, Cedar Rapids, and **Drs. Roger G. Kathol, Helmut G. Schrott,** and **David J. Skorton,** Iowa City, have been named fellows of the American College of Physicians. The physicians will be formally inducted at the College's annual scientific meeting in Washington, D. C., March 28-31, 1985.

Dr. Peter R. Marcellus, Creston, received a plaque from the East Union Boosters Club for his services to the East Union Athletic program. . . . At a recent banquet sponsored by the Tama Chamber of Commerce, **Dr. A. J. Havlik** was presented a distinguished service award for 50 years of service to the Tama community. Dr. Havlik received the M.D. degree at Loyola University School of Medicine in Chicago and began medical practice in Tama in 1934. He is a past member of the Tama City Council; past president and charter member of the Tama Lions Club; past board member of the Tama State Bank and continues to serve as director. Dr. Havlik has served as secretary-treasurer of the Tama County Medical Society for 38 years. He is a past chairman of the IMS Board of Trustees; and life member of the Iowa Medical Society and American Academy of Family Physicians. . . . **Dr. Robert W. Soll** has joined his brother, **Dr. Donald J. Soll,** at the Denison Medical Clinic, P.C. Dr. Robert received the M.D. degree at the U. of I. College of Medicine and served his neurology residency at the University of Minnesota where he was a member of the faculty in the Department of Neurology from 1973 to 1980. He practiced in Waterloo until more recent service with the Federal Aviation Agency in Washington, D. C.

Dr. Wayne E. Rouse, Boone, is now serving as president of the Iowa Academy of Family Physicians. Dr. Rouse received the M.D. degree at the U. of I. College of Medicine. Following Navy service, he joined **Dr. Henry Longworth** and **Dr. Ralph Wicks** in Boone, where he currently is associated with **Dr. John R. Anderson** and **Dr. Frank S. Downs.** Dr. Rouse is chairman of the IMS Committee on Member Services.

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WANTED — GOOD USED MEDICAL EQUIPMENT/FURNITURE — For family practice office. Send list and prices, or call Richard A. Young, M.D., Community Family Practice Clinic, P.C., P.O. Box 271, Clarion, Iowa 50525. Phone 515/532-2836.

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A Monthly Commentary

IN THE PUBLIC INTEREST

VARIETY OF VARIABLES

THE VARIATION in prices charged by Iowa hospitals has been center stage in recent weeks. How so?

Extensive data on this popular subject is in a report released in November by the Iowa Health Data Commission (IHDC). The report says, for example, it is probably less expensive to have a baby in a small hospital. To illustrate, the IHDC indicates the 42-bed Clarke County hospital in Osceola charges an average of $656 for a "normal" delivery. Meantime, St. Luke's Regional Medical Center in Sioux City, with its 330 beds, charges an average of $1627.

But, the IHDC findings show, smaller hospitals sometimes charge more for certain procedures. Contrast charges for an appendectomy between Shenandoah Memorial hospital (average $2670) and Iowa Methodist Medical Center in Des Moines ($2432).

The Data Commission was established July 1, 1983 by the Iowa General Assembly. Its job is to gather health care cost and use data. Then this data, properly compiled and explained, is to be made available to the public — the goal, of course, being to curb costs.

The new IHDC report is based on hospital claims paid by Medicaid and 3 major insurers: Bankers Life, Blue Cross of Iowa and John Deere. The 25 most frequent diagnoses are covered in the study for the period from July 1982 through June 1983.

The chart provides information on 6 of the 25 diagnoses. Shown are the lows and highs with the approximated average price range for smaller and larger hospitals. Admittedly, the sampling is small but the range in cost is noteworthy.

Length of stay information in the IHDC report shows differences as well. Why is there a disparity in cost and length of stay? Many reasons. Here is an apt response from the IHDC report:

IHDC HOSPITAL CHARGE DATA

	Low	High	Small Hospital Ave. Cast Range	Large Hospital Ave. Cast Range
Narmal Baby Delivery	$ 560	$1800	$ 700-1100	$ 900-1300
Chranic Disease af Tansils, Adenaids	$ 425	$1740	$ 600-1100	$ 700-1150
Pneumania, Organism Unspecified	$ 750	$3400	$ 900-1300	$1500-2000
Inguinal Hernia	$ 950	$2500	$1250-1650	$1300-1800
Myacardial Infarctian	$1400	$6400	$2200-3100	$3000-4500
Appendicitis	$ 900	$4800	$1300-2600	$1700-2600

"Individual cases differ; charges and length of stay will vary from one case to another . . . some patients with the same diagnosis are sicker than others; some have complicating conditions and additional diagnoses. They will tend to have more costly cases. Some hospitals, because of their medical staff and types of services, may tend to get more seriously ill patients and may have, on the average, higher costs."

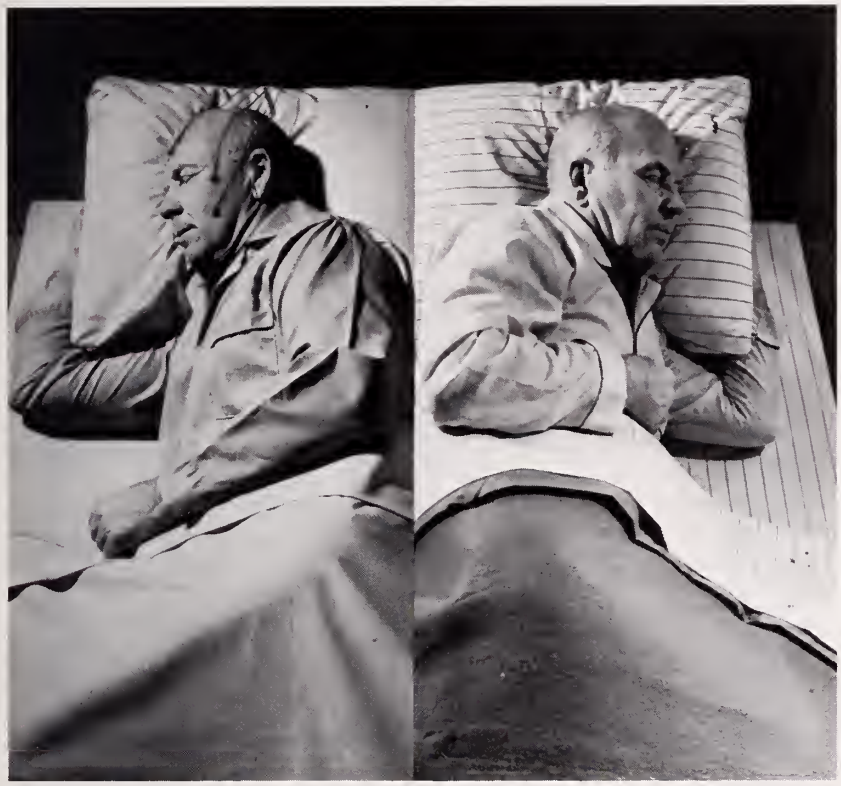
Hospitals differ as patients do. Hospital size and sophistication of service are obvious major factors in cost determination; overhead expense is greater in larger hospitals. Occupancy rates and staffing affect charges. Special activity, e.g., educational endeavors, research, etc., impact on charges. It is a complex proposition not easily given to comparison.

IHDC officials caution those evaluating their data that many variables exist. The numbers provide a data base for the study of health care costs. But the greatest value may come from a comparison of current findings with those produced from future studies of the same or similar nature.

This new IHDC report is worthy of note by the medical profession. As has been said often, in addition to a primary interest in quality, Iowa physicians need to assure fairness in the pricing process.

January 1985
Iowa Medicine

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References: 1. Kales J *et al: Clin Pharmacol Ther 12*:691-697, Jul-Aug 1971. **2.** Kales A *et al: Clin Pharmacol Ther 18*:356-363, Sep 1975. **3.** Kales A *et al: Clin Pharmacol Ther 19*:576-583, May 1976. **4.** Kales A *et al: Clin Pharmacol Ther 32*:781-788, Dec 1982. **5.** Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc* 27:541-546, Dec 1979. **6.** Kales A, Kales JD: *J Clin Pharmacol 3*:140-150, Apr 1983. **7.** Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther 21*:355-361, Mar 1977. **8.** Zimmerman AM: *Curr Ther Res 13*:18-22, Jan 1971. **9.** Amrein R *et al: Drugs Exp Clin Res* 9(1):85-99, 1983. **10.** Monti JM: *Methods Find Exp Clin Pharmacol 3*:303-326, May 1981. **11.** Greenblatt DJ *et al: Sleep 5*(Suppl 1):S18-S27, 1982. **12.** Kales A *et al: Pharmacology 26*:121-137, 1983.

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Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

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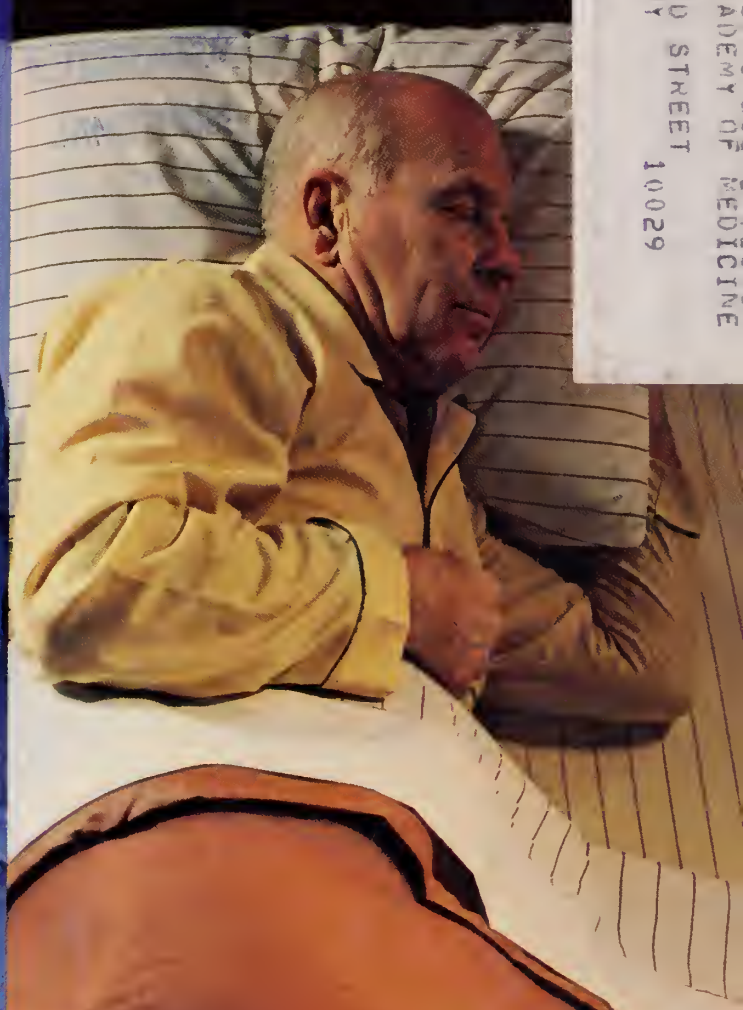
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IowaMedicine

Journal of the Iowa Medical Society

IPMIT

AMACO

ACRONYMS YOU NEED ON YOUR LIABILITY INSURANCE POLICY!!
SEE PAGE 50

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February 1985

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Volume 75 Number 2

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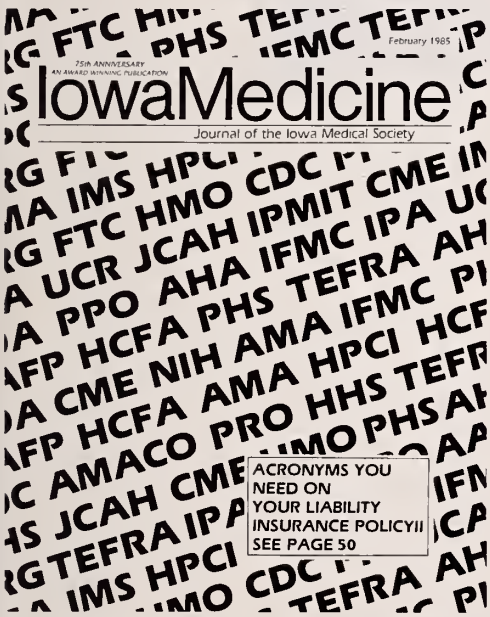
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ABOUT THE COVER



ABOUT THE COVER — The world of acronyms has 2 new and important ones for Iowa physicians. One is IPMIT and it stands for Iowa Physicians Mutual Insurance Trust. The other is AMACO — American Medical Assurance Company. Together they represent a significant professional liability insurance opportunity for IMS members. See page 50 for more information.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and saciaecanamic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Maines, Iowa 50265.

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Call or write Mr. Dale Hoing, IMS SERVICES, for complete information. We are located at IMS headquarters, 1001 Grand Avenue, West Des Moines, Iowa 50265 — Telephones: 515/223-1401 or 800/422-3070.

PRESIDENT'S PRIVILEGE



RATIONING OF MEDICAL CARE

RATIONING IS NOT a pleasant subject to discuss. A Reagan administration task force formed to look at possible limits in medical care was directed not to use the word *rationing*. Its members discussed instead the subject of resource allocation.

Powerful forces outside the profession of medicine are at work. There is national discussion of who will pay for heart transplants (TIME MAGAZINE). Victor Fuchs in the NEW ENGLAND JOURNAL OF MEDICINE states, "The United States will soon have to begin rationing medical care." Older citizens have organized to work for "natural" death — terminal care without prolongation by technology. The governor of Colorado became involved in the ongoing debate.

In his article Dr. Fuchs suggests, "The pressure to be more economical in the provision of care will force physicians to make decisions that are contrary to the best interests of individual patients, even though these decisions may make a great deal of sense from the viewpoint of society as a whole." He also concludes that because "The commitment of the individual physician to the individual patient is one of the most valuable features of American medical care"; therefore, "it would be a great mistake to turn each physician into an explicit maximizer of the social-benefit/social-cost ratio in his or her daily practice."

Dr. Fuchs also suggests that "health-plan managers" must make careful "analyses to help them make difficult decisions about the allocation of scarce resources."

When allocation is done, it is my hope that we as physicians will come together to help society make the best decisions possible. Then we as individual physicians can continue our commitment to our patients.

John Tyrrell, MD

John E. Tyrrell, M.D.
President

IMS-Sponsored Liability Insurance Program

Success Will Depend On You!

You need to know a lot of acronyms as you practice. IPMIT and AMACO are two new ones of great importance to Iowa physicians. IPMIT stands for Iowa Physicians Mutual Insurance Trust. AMACO is short for American Medical Assurance Company. Together they represent what your IMS physician leadership believes is the best answer to professional liability insurance protection in Iowa. Your participation in the IMS-sponsored IPMIT/AMACO program is essential if medicine is to take charge of its future.

Doctor, it's up to you!

If you want the Iowa medical profession to take definitive and aggressive action to improve malpractice insurance conditions, you have a great opportunity to be part of such an effort.

Your Iowa Medical Society has structured a new professional liability insurance program which is historically significant. It holds tremendous potential.

Success will depend on your interest and participation!

If you believe the phrase "control your own destiny" is applicable to medical liability protection, then thank these physician leaders for getting your IMS-sponsored program operational: *Drs. Warren Wulfekuhler and Pablo Recinos of Mason City; Drs. Clarence Denser, Dennis Walter and Don Sweem of Des Moines; Drs. Erling Larson and John Sinning of Davenport; Drs. Emmett Mathiasen and Krishna Birusingh of Council Bluffs; Drs. Ed Alt and Ken Hazlet of Dubuque; Dr. John Tyrrell of Manchester; Dr. Bob Manderscheid of Boone, and Dr. Paul Gregory of Sioux City.*

These colleagues, and others, have brought our IPMIT/AMACO professional liability insurance program into being. They did so at the behest of the 1984 IMS House of Delegates which authorized the project unanimously.

The Iowa Medical Society-sponsored IPMIT/AMACO professional liability insurance program became operational in January. The numerous start-up requirements were met as the calendar turned to 1985. Applications for coverage were mailed to member physicians January 3 with accompanying informational material.

Several hundred applications are in the processing stage as this article is prepared. The applications are being handled carefully and expeditiously to address important time considerations. Administrative efficiency will be a watchword of the IPMIT/AMACO program.

The organizational members of the team assembled to deliver the new IMS-sponsored professional liability insurance protection should be known and understood by Iowa physicians:

IOWA PHYSICIANS MUTUAL INSURANCE TRUST (IPMIT) — IPMIT is an insurance company formed by the Iowa Medical Society under a special chapter of the Iowa Code. It has been capitalized by the IMS in accordance with the applicable law and it has a

limited assessability provision. The IPMIT Board of Directors has 9 members: 4 physicians from the IMS Board of Trustees; 3 physicians from the IMS Medico-Legal Committee; the IMS executive vice-president, and one individual with special knowledge in banking and finance.

AMERICAN MEDICAL ASSURANCE COMPANY (AMACO) — AMACO is a wholly-owned subsidiary of the American Medical Association and has the stature and backing of the AMA. It was formed in 1976 to assist physician-formed professional liability insurance companies. AMACO provides reinsurance support to approximately half of the 40 physician-owned and operated companies in the country.

IMS SERVICES COMPANY — IMS Services is a newly formed affiliate of the Iowa Medical Society. Services is the marketing arm for the IPMIT/AMACO professional liability insurance program. Mr. Dale Hoing is an Iowa licensed insurance agent employed by Services to perform this important function.

VICTOR O. SCHINNERER COMPANY (VOSCO) — Professional insurance expertise is being supplied by VOSCO. Included here are actuarial, insurance accounting, risk management and other important support functions.

IPMIT LEADERSHIP

The Iowa Physicians Mutual Insurance Trust has a 9-member Board of Directors. This Board includes 4 physicians from the IMS Board of Trustees; 3 physicians from the IMS Medico-Legal Committee; the IMS executive vice-president, and a prominent executive in banking/investment.

In addition, the IPMIT organizational structure has physician committees to work in these areas:

- UNDERWRITING
- CLAIMS ADJUDICATION
- RISK MANAGEMENT
- FINANCE/INVESTMENT

Individuals with special expertise will support physicians on these committees.

HOW TO APPLY FOR IPMIT/AMACO COVERAGE!

Applications for coverage have been mailed to IMS member physicians. Additional applications will be furnished promptly upon request. Full information about any aspect of the program will be furnished in response to any telephone call or letter.

For information about the IPMIT/AMACO program, please contact Mr. Dale Hoing, IMS Services Company, 1001 Grand Avenue, West Des Moines, Iowa 50265 — Telephone: 515-223-1401 or 800/422-3070.

In addition, a major national reinsurer is part of the team. This company has assets of $1 billion and is known for its long-term commitments.

THE BASICS OF THE IMPIT/AMACO PROGRAM

When you apply for professional liability insurance coverage under the IMPIT/AMACO program you may select one of the following limits:

Per Medical Incident	*Per Annual Aggregate*
1. $250,000	**$500,000**
2. $1 million	**$1 million**
3. $2 million	**$2 million**
4. $5 million	**$5 million**

The first $25,000 of any claim liability will be paid on behalf of an insured by IPMIT. Consistent with this, a portion (approximately one-third) of the total premium paid by an insured physician will be allocated to IPMIT.

Any liability in excess of $25,000 will be assumed by AMACO. Subject to the $25,000 deductible, AMACO is issuing professional liability policies up to $5 million under the complementary program.

The administration of the program is fully integrated so the individual insured physician will be in contact with a single source and will direct all matters associated with the coverage to one point (IMS Services).

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(Please turn to page 79)

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Computers and Your Practice — Can You Really Use One?

DUANE ABBEY, Ph.D., and
MARY ABBEY

This is the second in a series on computer use in medical practice. Building on the earlier assessment of basic need, this discussion addresses feasibility. Four feasibility components are noted as important: technical, economic, financial and operational. The underlying need is to think before you act.

A NUMBER OF medical and nonmedical professionals have purchased computer systems with high expectations. In some cases, however, these systems are gathering dust after a few months. Two obvious questions come to mind:

1. *Why did these professionals fail to use the computer system?*
2. *How can I avoid falling into the same trap?*

There are no pat answers. The matter of feasibility is exceedingly important. By examining the feasibility, you can determine pretty well if a computer system is a "practical" tool that will enhance and facilitate your practice.

FEASIBILITY ANALYSIS

Of course you need to consider the practicality of bringing computer technology into your practice. This involves making a feasibility analysis. This is a systematic process wherein you assess the potential usefulness. There are four types of feasibility:

1. **Technical**
2. **Economic**
3. **Financial**
4. **Operational**

You really accomplish two goals by addressing each of these areas. First, you may identify factors that make it impractical to acquire a computer system. For instance, you may discover an additional staff person will be needed full-time to operate the system. In other words, you may have to have (or become yourself) an in-house computer *guru*. You may consider this operationally or financially impractical.

Secondly, by considering each of the four areas, you will be able to pinpoint the constraints impacting on your choice of computer systems. For example, with respect to financial feasibility, you may decide you can afford a cash outlay of $5,500 per year for the next five years to install a computer system. This is a factor of consequence in your feasibility analysis.

TECHNICAL FEASIBILITY

The question of technical feasibility is:

Does the technology exist that will support the applications and goals you desire?

This question is a real challenge when examined in detail. It will bring you headlong into things like microprocessor chips, storage capabilities, data transfer rates, operating systems, application systems and the like. Computer technology is evolving so rapidly there

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are few tasks that cannot be performed given the desire. Moreover, there has been a significant development of medical office application systems in the past several years. Thus, the question of technical feasibility will generally not produce significant constraints. However, even if an objective is technically feasible, it may not be one that is easy to use. Further, it may not achieve the goal of increased efficiency.

ECONOMIC FEASIBILITY

Economic feasibility obviously demands serious investigation. The question you should ask yourself is:

Is acquisition and implementation of a computer system worth doing?

Worth in this case is synonymous with *cost-benefit*. Thus, the question becomes, "Do the benefits justify the cost of the system?" A cost-benefit analysis is larger usually in scope than just economic feasibility. It involves a careful assessment of both the costs and the benefits. Normally both costs and benefits are quantified in dollars and a comparison is made.

"Identifying all costs is a difficult task. It is hard to delineate and quantify the benefits you can gain from a computer system. . . . Be aware that in looking at cost you will probably underestimate its overall impact on your practice. At the same time, in looking at benefits you will probably find a number of uses for the computer that were not anticipated."

When you look at costs, be careful to identify *ALL* of them. The cost of a computer system goes well beyond the dollar amount you pay for the hardware and applications software. There is the time you spend assessing computers, selecting a system, acquiring and installing it, and finally integrating it into your practice. There are increased personnel costs. Someone will have to operate the system. Thus, training (and retraining) must be considered.

There are potential disruption factors, employee concern or even dissatisfaction, and time needed for psychological adjustment. When you think of costs, think beyond the simple purchase price of the system!

Identifying all costs is a difficult task. It is hard to delineate and quantify the benefits you can gain from a computer system. The basic benefits are efficiency and increased effectiveness. There is the initial hope of saving money. More realistically, however, is the prospect of containing future costs. How do you identify and then put a dollar value on the benefits? Start the process by looking at how you are going to use the system. Will a word processing feature speed things up? Will an accounts receivable system expedite the cash flow or help collect accounts otherwise written off? Will a computerized medical records system give you faster access to information? Will the information be more accurate? Will access to a medical data base enhance your ability to treat patients?

Efficiency gains can generally be quantified. If statements can be processed and sent in half the time, you can calculate the savings in personnel time. However, increased effectiveness can be difficult to quantify. What is the value of information you can access through a medical data base? This is a subjective matter. There are various potential intangible benefits. Your professional image may be enhanced in the perception of patients and colleagues by the use of a computer system. What is the value of this perception?

Be aware that in looking at cost you will probably underestimate its overall impact on your practice. At the same time, in looking at benefits you will probably find a number of uses for the computer that were not anticipated.

Be mindful, however, that the benefits you derive will be directly proportionate to the commitment you make to using the system. Note there are instances when systems are acquired even though there is difficulty in balancing all the costs against potential benefits.

FINANCIAL FEASIBILITY

Financial feasibility means simply, can you afford a computer system. The question of

affordability needs to be interpreted in the broader perspective of overall costs. You may have the cash to buy a system, but you may not be able to afford the loss of personnel productivity during implementation.

There is much variability in the cost of systems. A small single user microcomputer configuration may cost several thousands of dollars while a multi-user supermicrocomputer or minicomputer configuration may run well into the tens of thousands of dollars. The question is what can you afford. Note that this is different from cost justification. You may be able to cost justify a $65,000 system but be able to afford only a $30,000 system.

The cost constraints applicable to the acquisition of your computer system can be mitigated in accordance with the payment provisions which are negotiated. You can pay cash, borrow the money, lease-purchase or just lease. Remember to include costs that are sometimes hidden such as maintenance, insurance, taxes, etc., when you consider different financing arrangements.

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OPERATIONAL FEASIBILITY

Probably the most critical feasibility question is:

Can your organization appropriately assimilate and effectively put the computer system to work?

This is the people question! Are you and your staff ready to accept computer technology? Do you have training plans in mind? Who is going to be your computer *guru?* Will there be resistance to changes created by the computer system? What is the overall implementation plan?

There are the questions of commitment and involvement. As the physician and overall manager of your practice, you must be committed to the use of the computer. You must also be involved to an appropriate extent. Your office manager must be committed and involved to an even greater extent. Finally, those employees who will use the computer on a daily basis must know of the commitment which is being made so they can give priority consideration to the computer system.

One employee will be your system expert or what is called the "system administrator." This person will work on the computer and supervise others. The relative investment made in this person will be significant. In addition, there should always be a backup system administrator!

CRITICAL QUESTIONS

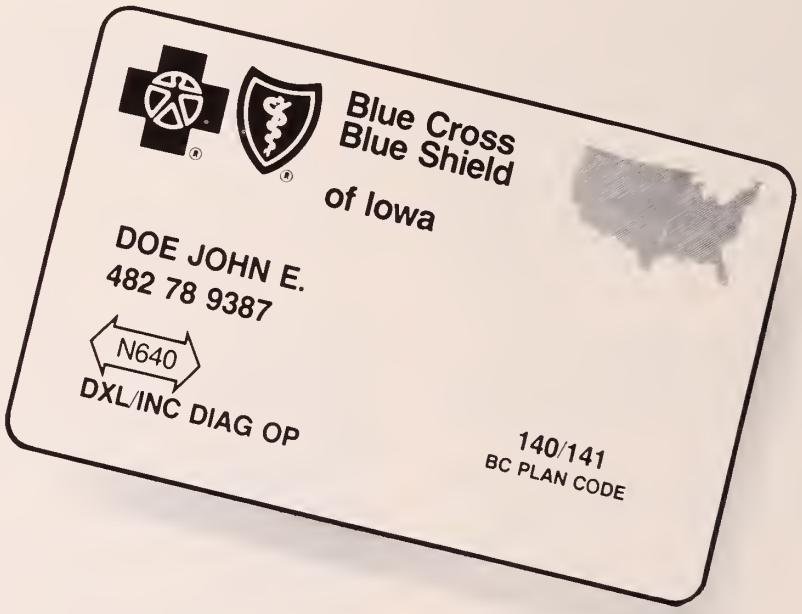
Feasibility analysis involves compiling answers to a series of questions about the practicality of acquiring and implementing a computer system. Four important areas have been mentioned:

Technical — Does the technology exist to support my needs?
Economic — Is the system cost-beneficial?
Financial — Can I afford the system?
Operational — Is my organization prepared to accept and effectively utilize the system?

Probably the area most often overlooked is operational feasibility. Before you proceed, be certain the people involved in your practice are prepared to implement a computer system.

The feasibility process cannot be overemphasized. With proper consideration you can bring the right system into your practice at the right time to meet the appropriate goals and objectives.

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Proof that there really is no substitute for good health.

Blue Cross
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of Iowa
Des Moines

Merle Wilson, Ed.D.

QUESTIONS AND ANSWERS



ELDERLY ISSUES

Merle Wilson, Ed.D., state legislative chair for the American Association of Retired Persons (AARP), has been involved with AARP for 5 years. He is past president of the Retired Teachers Association and, prior to retirement, was an administrator in the Des Moines public schools. Dr. Wilson discusses elderly concerns including health care needs.

What is the American Association of Retired Persons (AARP)? What are the requirements for membership? How many Iowans belong?

The American Association of Retired Persons is a national organization of older persons. We have a national membership exceeding 18 million. More than 233,000 Iowans belong to AARP. Anyone over 50 is eligible to join for $5 a year; you need not be retired. Association membership provides many benefits, including informative publications, discounts and representation at the state and federal levels.

What are the AARP legislative priorities?

The AARP state legislative committee represents its Iowa members. The committee has 9 members from our statewide constituency. The committee works not only for AARP members but for all older Iowans. Each year the state committee selects certain legislative priorities based on the needs of the elderly. We use guidelines developed by the AARP national legislative council. State committee members work with Iowa lawmakers to promote passage of legislation beneficial to our elderly population. This year, of 8 major concerns 4 relate to health care: 1) appropriate and affordable quality health care for older Iowans, doing this by expanding in-home and community-based long-term care services and by backing well-elderly clinics; 2) passage of a natural death act or living will statute; 3) establishment and enforcement of quality home health care standards through provider certification/licensure, and 4) provisions to insure that privileges for the handicapped are maintained and improved.

We understand there is an Older Iowans Legislature. How does it work?

The seventh annual Older Iowans Legislature met last September. One hundred delegates (age 60 and older) were elected by their peers. The session provides a forum to discuss senior citizens issues; to select legislative priorities; to provide advocacy training to help the delegates be active in the actual legislative process from their homes.

The elected delegates to the Older Iowans Legislature meet with their constitutents to determine concerns and prepare bills. Prefiled bills are reduced to 18 and assigned to committees. We simulate the Iowa House of Representatives and give consideration to bills reported out of committee. An agenda of 5 bills receives priority attention.

The outcome is reported by the delegates to their constituents and local advocacy groups are formed to pursue the issues with state legislators. Current health care priorities are the Comprehensive Long-Term Care Act, the Natural Death Act and Well-Elderly Clinics.

One AARP activity has involved canvassing physicians regarding Medicare assignment. Would you explain this project?

The AARP has sought to assist members in cutting health costs without jeopardizing quality. Many AARP chapters and units of the Re-

(Please turn to page 66)

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Informed Consent For Breast Cancer Patients

HILARY E. LEWIS, J.D.
Chicago, Illinois

Various states have taken legislative action to address the matter of informed consent as related to breast cancer. Here is a summary of this activity. Medicine has said physicians can serve patients best by following the doctrine of general informed consent.

THE CONCEPT of informed consent occupies a long history in the evolution of the law. Unauthorized touching of another constitutes a battery, an actionable tort. If an individual is placed in reasonable fear that an attempt to inflict bodily injury will be perpetrated upon him, an assault has been committed. The legal concepts of assault and battery eventually found their way into the area of health care law and, more specifically, into the physician/patient relationship. In an early case, Justice Cardozo articulated the following doctrine:

Every human being of adult years and sound mind has a right to determine what shall be done with his own body and a surgeon who performs an operation without his patient's consent commits an assault for which he is liable in damages.[1]

This principle, the patient's right to self-determination, to decide on what form of treatment to accept, or to refuse treatment altogether, has become the cornerstone of informed consent. The patient must be given sufficient information to enable him or her to arrive at a decision regarding the appropriate form of medical care to be administered. Primary functions of the doctrine of informed consent thus include promotion of individual autonomy and encouragement of rational decision-making.

The courts have attempted to define the parameters of informed consent in the context of cases in which physicians have been challenged as to whether they have discharged the duty to explain a procedure to the patient and to apprise the patient of alternatives and risks of various treatment modalities. The majority of courts has adopted the view that disclosure to patients must conform to the general practice of medical professionals in the same or similar community, also known as the professional standard of disclosure.[2] In the 1970s, the courts analyzed the physician's duty to disclose risks material to the patient's decision about whether to undergo a proposed treatment, known as the material risk approach.[3]

Just as the courts have articulated various aspects of the informed consent theory, the state legislatures have enacted laws describing the standard physicians must meet in disclos-

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THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF FEBRUARY 1985

ing information to patients. Most of these statutes may be characterized as general informed consent provisions, which have been adopted in the majority of jurisdictions. The Nebraska law is one example of such a measure:

Informed consent shall mean consent to a procedure based on information which would ordinarily be provided to the patient under like circumstances by health care providers engaged in a similar practice in the locality or in similar localities. Failure to obtain informed consent shall include failure to obtain any express or implied consent for any operation, treatment, or procedure in a case in which a reasonably prudent health care provider in the community or similar communities would have obtained an express or implied consent for such operation, treatment, or procedure under similar circumstances.[4]

". . . the state legislatures have enacted laws describing the standard physicians must meet in disclosing information to patients."

Another type of general informed consent statute was enacted in Pennsylvania:

"Informed consent" means for the purposes of this act and of any proceedings arising under the provisions of this act, the consent of a patient to the performance of health care services by a physician or podiatrist. Provided, that prior to the consent having been given, the physician or podiatrist has informed the patient of the nature of the proposed procedure or treatment and of those risks and alternatives to treatment or diagnosis that a reasonable patient would consider material to the decision whether or not to undergo treatment or diagnosis. No physician or podiatrist shall be liable for a failure to obtain an informed consent in the event of an emergency which prevents consulting the patient. No physician or podiatrist shall be liable for failure to obtain an informed consent if it is established by a preponderance of the evidence that furnishing the information in question to the patient would have resulted in a seriously adverse effect on the patient or on the therapeutic process to the material detriment of the patient's health.[5]

And, finally, it is instructive to look at the more detailed type of information which Iowa requires its physicians to disclose:

A consent in writing to any medical or surgical procedure or course of procedures in patient care which meets the requirements of this section shall create a presumption that informed consent was given. A consent in writing meets the requirements of this section if it:

1. Sets forth in general terms the nature and purpose of the procedure or procedures, together with the known risks, if any, of death, brain damage, quadriplegia, paraplegia, the loss or loss of function of any organ or limb, or disfiguring scars associated with such procedure or procedures, with the probability of each such risk if reasonably determinable.

2. Acknowledges that the disclosure of that information has been made and that all questions asked about the procedure or procedures have been answered in a satisfactory manner.

3. Is signed by the patient for whom the procedure is to be performed, or if the patient for any reason lacks legal capacity to consent, is signed by a person who has legal authority to consent on behalf of that patient in those circumstances.[6]

Specific Informed Consent

From the general type of informed consent statute, state legislatures have begun to address the doctrine in a more specific framework. In 1977, the Texas Medical Disclosure Panel was established in order to determine which risks and hazards related to medical care and surgical procedures must be disclosed. The procedures have been outlined in two lists. Certain procedures require full disclosure while other procedures require no disclosure. Highly specific lists have been published covering a myriad of procedures. Physicians wishing to obtain statutory protection must follow the disclosure procedures. If physicians provide at least these minimum levels of disclosure, the consent form signed by the patient will serve as evidence that the physician has discharged the duty to inform the patient.[7]

Breast Cancer Informed Consent

1. *Patients' Bill of Rights Approach*

The unique Texas law sets the stage for the types of statutes which comprise the subject of this article: namely, measures providing, in general terms, for the disclosure of alternative therapies, procedures and risks associated therewith, by physicians treating breast cancer patients.

One of the first means of addressing this issue came through the enactment of patients' rights laws. In a consumerist society, where

the patient has come to be regarded as a consumer of health care services, statutes requiring disclosure of information needed to make health care decisions have become a logical outgrowth. Massachusetts enacted its patients' rights law in 1979. It states that:

Every patient or resident of a facility shall have the right:

(h) in the case of a patient suffering from any form of breast cancer, to complete information on all alternative treatments which are medically viable.[8]

Minnesota initially dealt with the issue through its patients' bill of rights law. It had a provision which stated:

(22) Every patient or resident suffering from any form of breast cancer shall be fully informed, prior to or at the time of admission and during her stay, of all alternative effective methods of treatment of which the treating physician is knowledgeable, including surgical, radiological, or chemotherapeutic treatments or combinations of treatments and the risks associated with each of these methods.[9]

When the 10-year old patients' bill of rights statute was redrafted in 1983, the above provision was deleted. The 1983 codification of the bill of rights contained a more general informed consent provision:

Subd. 9. Patients and residents shall be given by their physicians complete and current information concerning their diagnosis, treatment, alternatives, risks, and prognosis as required by the physician's legal duty to disclose. This information shall be in terms and language the patients or residents can reasonably be expected to understand. Patients and residents may be accompanied by a family member or other chosen representative. This information shall include the likely medical or major psychological results of the treatment and its alternatives. In cases where it is medically inadvisable, as documented by the attending physician in a patient's or resident's medical record, the information shall be given to the patient's or resident's guardian or other person designated by the patient or resident as his or her representative. Individuals have the right to refuse this information.[10]

The 1983 patient's bill of rights also provided for the right to participate in the planning of one's health care, including "the opportunity to discuss treatment and alternatives with individual caregivers, the opportunity to request and participate in formal care conferences,"[11] and the right to refuse treatment, as long as patients are "informed of the likely medical or major psychological results of the refusal."[12]

In 1984, however, a supplemental appropriations measure enacted in Minnesota reinserted the identical language that had been deleted in 1983. As the patient's bill of rights law now stands, the breast cancer informed consent provision has been added to the general informed consent requirement.[13]

2. *Professional Responsibility Approach*

In California, a statute was passed in 1980 stating:

The failure of a physician and surgeon to inform a patient by means of a standardized written summary . . . of alternative efficacious methods of treatment which may be medically viable . . . when the patient is being treated for any form of breast cancer constitutes unprofessional conduct.[14]

The law was to have become effective on January 1, 1981. However, compilation of an acceptable standardized written summary proved to be a difficult task. Many drafts of the brochure were prepared as various groups expressed a preference for emphasis upon different treatment alternatives. Some wanted to include the Halsted radical mastectomy as an option; others wanted the brochure to emphasize radiation and chemotherapy; while yet another group wanted more information on breast reconstruction to be included.

"It is argued that the issue of breast cancer informed consent may best be addressed by physicians ascribing to the doctrine of general informed consent."

A pamphlet was finally produced and mailed to California physicians in March 1983.

Kansas has also dealt with the issue of breast cancer informed consent through a professional responsibility approach. The Kansas Legislature recently expanded the grounds for revocation, suspension or limitation of a medical license to include failure:

to inform a patient suffering from any form of abnormality of the breast tissue for which surgery is a recommended form of treatment, of alternative methods of treatment specified in the standardized summary supplied by the Board.[15]

The State Board of the Healing Arts is to develop and distribute the summary to licensed physicians. The summary will outline alternative modes of treatment, including sur-

gical, radiological or chemotherapeutic treatments and the attendant risks. The new provision will not be construed:

to empower or authorize the Board to restrict in any manner the right of a person licensed to practice medicine and surgery to recommend a method of treatment or to restrict in any manner a patient's right to select a method of treatment.[16]

3. Standardized Written Summaries

In 1983 and 1984, a number of states enacted laws which require the drafting and distribution of standardized written summaries or pamphlets for patients suffering from and known to be at risk for breast cancer. The Florida law is typical:

By January 1, 1985, the (Florida Cancer Control and Research Advisory) [B]oard shall develop and prepare a standardized written summary, written in layman's terms and in language easily understood by the average adult patient informing actual and high risk breast cancer patients of the medically viable treatment alternatives available to them in the effective management of breast cancer, describing such treatment alternatives and explaining the relative advantages, disadvantages and risks associated therewith. Upon its completion, such summary shall be printed in the form of a pamphlet or booklet and made available to physicians and surgeons in this state . . . and to osteopathic physicians in this state. The board shall develop and implement an educational program, including distribution of the pamphlet or booklet . . . to inform citizen groups, associations, and voluntary organizations about early detection and treatment of breast cancer.[17]

The Florida law obligates a physician treating a patient who is either diagnosed as having breast cancer, or at high risk of being so diagnosed, to inform the patient of medically viable treatment alternatives available, and to describe and explain the relative advantages, disadvantages and risks associated therewith. The physician may orally communicate the information, provide a patient with a copy of the written summary, or both. "The physician may, in his discretion and without restriction, recommend any mode of treatment which is in his judgment the best treatment for the patient."[18]

Georgia has also passed a law directing the State Board of Medical Examiners to develop and distribute an informational booklet on breast cancer. It is to include the generally accepted and widely prevailing medical and surgical treatments, their risks and benefits. A copy of the booklet will be made available to physicians with an accompanying letter urging physicians to distribute the booklet to every patient whose disease or course of treatment is covered by the material in the booklet.[19]

Kentucky has enacted a similar provision directing the formulation of a standardized written summary in layman's language:

of the advantages, disadvantages, risks and descriptions of all medically efficacious and viable alternatives for the treatment of breast cancer. Upon receipt of the summary, any physician licensed under the laws of the Commonwealth who treats a patient for any form of breast cancer shall provide the patient with a standardized written summary . . . informing the patient of medically efficacious and viable alternative methods of treatment for breast cancer which may include surgical, radiological or chemotherapeutic treatment or combinations thereof.[20]

4. Forms and Guidelines

In 1983, Hawaii amended its law to direct the Board of Medical Examiners to establish standards for health care providers to follow in giving information to a patient, or to a patient's guardian, to ensure that the patient's consent to the performance of a mastectomy is an informed consent. The standards were to include the substantive content of the information to be given, the manner in which the information is to be given by the health care provider and the manner in which consent is to be given. The law directed that substantive content of the information include material on the recognized alternative forms of treatment.[21]

The Hawaii Senate adopted a resolution in 1984 requesting the Board of Medical Examiners and the Department of Commerce and Consumer Affairs to provide for the effective distribution of the standards on informed consent for breast cancer treatment to physicians in the state and that additional copies be distributed or readily available for the use of their patients.[22] The guidelines define a biopsy, modified and radical mastectomy, local excision and radiation, chemotherapy, clinical trials and protocol. They were written by the Hawaii Board of Medical Examiners, Hawaii Medical Association and the American Cancer Society.

In Virginia, a 1982 bill was defeated, which would have required physicians to provide a

patient with "complete and current information concerning the diagnosis and prognosis" of breast cancer in terms the patient can "be reasonably expected to understand." The legislative session of 1984 included the passage of a law that prohibits performance of a biopsy and a mastectomy in the same operation unless the patient has signed a consent form authorizing the surgeon to conduct the operation. The form would include:

CONSENT FOR TREATMENT OF BREAST TUMOR

Sign option (a) or option (b), or option (a) and (b).

(a) _____ **Breast Biopsy**
Side (right or left)

_____

Patient's or other authorized person's signature

(b) If it is determined that I have a malignant tumor in my breast or other breast abnormality requiring surgery, then I authorize Dr. _____to perform such operations or procedures, including breast removal, which are deemed necessary.

Procedure:

_____

_____

Patient's or other authorized person's signature.[23]

New Jersey has recently enacted a law which may be characterized as a hybrid between the "forms and guidelines" approach and the "professional responsibility" approach. The statute is similar to the measure enacted in Virginia insofar as it requires a physician to obtain written consent from the patient or the patient's representative before operating on a patient for a tumor of the breast, on a form which allows the patient:

a. to give consent only for a biopsy;
b. to give consent to perform any necessary operation or procedure including breast removal if it is determined that the patient has a malignant tumor or other breast abnormality; or
c. to give consent for both a biopsy and an additional operation or procedure if necessary.

Any physician failing to comply with the statute is subject to disciplinary action by the State Board of Medical Examiners pursuant to the New Jersey Medical Practice Act.[24]

Arguments Against Breast Cancer Informed Consent Laws

Breast cancer informed consent legislation has been promoted in the various states primarily by women's groups. Most of these organizations offer the testimony of witnesses who submitted to a biopsy and awoke from the procedure without a breast.

Generally, medical societies have opposed this type of legislation on several grounds. Since most states already have general statutory informed consent provisions which cover all types of procedures and treatments, legislation to single out one disease for a special type of consent is unnecessary. If laws were enacted on every conceivable type of treatment, compliance would be onerous if not impossible. A law prescribing discussion and information regarding medical techniques in an area of rapidly advancing technology, moreover, might make any statutory directive obsolete soon after its passage.

The informed consent doctrine is endorsed and supported by physicians. However, this specific type of legislation represents an unnecessary intrusion into medical practice. Simplified treatment lists and brochures which satisfy all concerns do not address the issue, as any witness to the tortured history of the California summary outlined *supra* could testify.

Proponents of these measures have also included practitioners who oppose drug therapy and surgical procedures. Many of these are naturopathic in orientation and have spoken in favor of proposals permitting the use of laetrile.

It is argued that the issue of breast cancer informed consent may best be addressed by physicians ascribing to the doctrine of general informed consent. In this way, patients can play a role in their own health care decision-making, after being made aware of the information necessary to arrive at a rational and informed decision.

REFERENCES

The references noted in this paper are available on request either from the authors or the editors of IOWA MEDICINE.

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Congenital Non-Parasitic Solitary Cyst of the Liver

J. L. GARRED, SR., M.D. and
RONALD CRESWELL, M.D.
Whiting, Iowa

Benign congenital liver cysts are rare. Some 500 cases have been reported. The CT scan and ultrasound should increase the detection and reporting of these cysts, many of which have gone undetected. This case report will serve primarily to review the symptomatology, clinical and physical findings.

THIS IS A CASE REPORT of a single, congenital non-parasitic, solitary cyst in the liver of a 60-year-old white female.

The patient complained particularly of distress and tenderness in the right upper quadrant of her abdomen; also some pain in the mid-epigastric area. She also noted pain at the base of her neck and into the right shoulder. As the abdominal distress became more prominent, the patient felt she might have a stomach ulcer, though she denied any association with food intake.

The physical examination was not helpful in pinpointing any particular findings. Upper gastrointestinal tract X-ray studies were normal, as was the gallbladder X-ray evaluation. Liver function laboratory data were normal. Ultrasound evaluation of the liver revealed a large cyst. This cyst was confirmed with the CT scan of the liver. Serum electrophoresis determinations revealed a normal pattern with no abnormal protein fractions.

Needle biopsy, using a Cheba needle, yielded about 50 ml of greenish clear fluid. This fluid was free of organisms, leukocytes, parasitic parts, and produced no growth in anaerobic as well as aerobic cultures. Agglutination for entamoeba histolytica were negative.

Surgical exploration revealed a large cyst situated in the dome of the liver. The upper surface of the liver formed a thin roof over the cyst. This cyst was aspirated to yield approximately 90 ml of fluid similar to that recovered in the initial needle biopsy. The roof of the cyst was removed to its edges. The remainder of the wall of this cyst was within the liver substance and left undisturbed. Electrocoagulation controlled the bleeding at the edges.

The patient recovered without incidence. She denied pain and discomfort. An ultrasound examination of the liver was normal about 2 months later.

The first solitary benign liver cyst was discovered by Michel in 1856.[9] Since then over 500 cases have been reported in the literature.[11] The commonly accepted classification of nonparasitic liver cysts in a modification of Sonntag (cited by Flagg)[5]:

A. Pseudocysts (Degenerative)
B. Terratomatous (Dermoids)
C. Lymphatic (Lymphangiomatous)
D. Endothelial (Ciliated epithelial lining)
E. Proliferative (Cystoadenomata)
F. Retention
  1. Solitary
  2. Multiple

Dr. Garred practices general medicine in Whiting, Iowa. Dr. Creswell was a senior medical student at the University of Nebraska when this paper was prepared and is now a family practice resident in Sioux City.

The major theory for their origin is derivation from aberrant bile ducts (Moschowitz, 1906). The highest incidence occurs in the fifth and sixth decade of life with the youngest reported case being a 4-day infant.[7] The female to male ratio is 4:1.

Diagnosis. There is no specific symptom complex. The patient most often complains of an abdominal mass or upper abdominal pain. Rupture of the cyst or twisting of a pedunculated cyst may cause acute abdominal pain. Less common symptoms are changes in bowel habits, indigestion, nausea, vomiting, dyspareunia or dystocia.[6] Signs include abdominal mass, distended or tender abdomen and, rarely, jaundice. Laboratory results are usually not affected. CT scan and ultrasound can be used to determine location and extent of the cyst and cystic versus mass effect. Arteriography may outline the cyst wall and nuclear imaging demonstrates a mass effect.

Plain abdominal films may show elevation of either diaphragm, abnormal soft tissue density, displacement of upper abdominal contents, duodenal or antral obstruction, or right hydronephrosis or hydroureter.

Pathology. 60% of the cysts occur in the right hepatic lobe on the anteroinferior surface.[5] Grossly, the cysts appear as smooth, greyish or greyish blue in color with a network of veins over the surface. The capsular surface may be thin, translucent, fibrous, partially necrotic, bosselated or partially calcified.[5] The volume has ranged from several milliliters to 17 liters with the average being 2000 ml.[1] The fluid may be thin, viscous, clear, watery, mucoid, serous, straw colored, green, blood tinged or grossly hemorrhagic.[5] The capsular wall is usually composed of connective tissue with an inner lining of a single layer of cuboidal epithelium resembling that of bile ducts.[5]

Treatment. Complete excision or enucleation are the treatments of choice. Drainage, marsupialization or partial excision often result in prolonged drainage or infection and should be reserved for patients considered poor risks.[5] Intra-operative cystography or cholangiography may be helpful to delineate location and extent of cysts to facilitate complete removal.[11]

REFERENCES

The references noted in this paper are available on request either from the authors or the editors of IOWA MEDICINE.

QUESTIONS AND ANSWERS

(Continued from page 57)

tired Teachers Association have polled local physicians on acceptance of Medicare assignment. This was done to create a directory of physicians who accept assignment.

Before the federal government took its most recent action on this subject, AARP members sent postcards to physicians or contacted them in other ways to encourage their acceptance of Medicare assignment as payment in full. This was beneficial in opening dialogue between physicians and patients on rising health care costs.

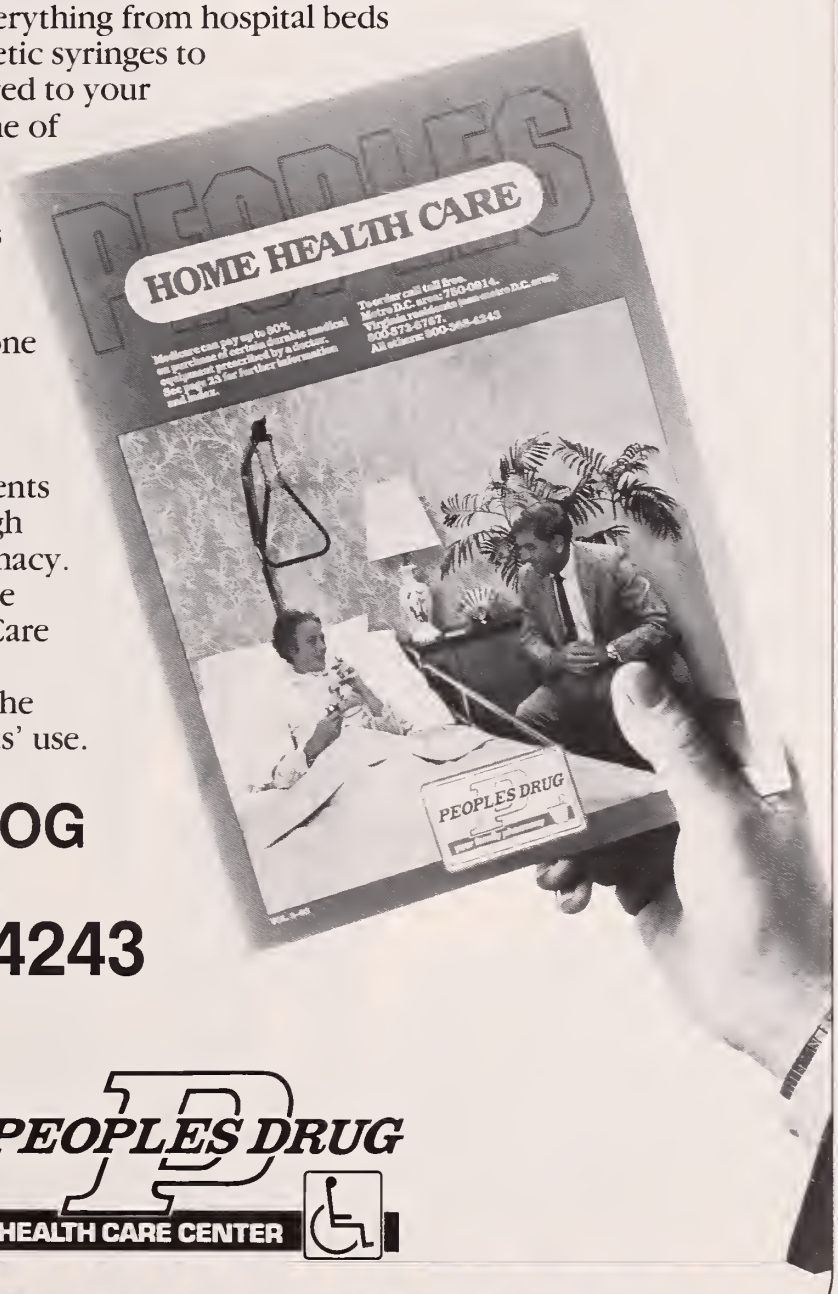
What can physicians do to better meet the needs of the elderly?

Gerontology is a new area of specialization. We are learning that many heretofore hopeless deteriorating conditions of the aged are actually treatable. New attention is being focused on nutrition and medicinal needs. Many physicians trained under the medical model have viewed aging as a sickness rather than a stage in life. Physicians are becoming better able to care for older persons. In addition, older persons are extremely interested in improving their health. We encourage physicians to communicate with older patients as fully as possible — on treatment alternatives, use of medicine, nutrition, exercise, etc.

The high cost of medical care is a growing concern to older persons. The belief is that costs are too high, even though there is little agreement on how to solve the problem. The answer is not in blaming one another but in opening communications. This piece is a step in that direction. AARP welcomes discussion with the physician community to cover the needs of the older person and the problem of rising costs. AARP looks to physicians as gatekeepers of the health care system; we need you to develop and maintain quality care standards.

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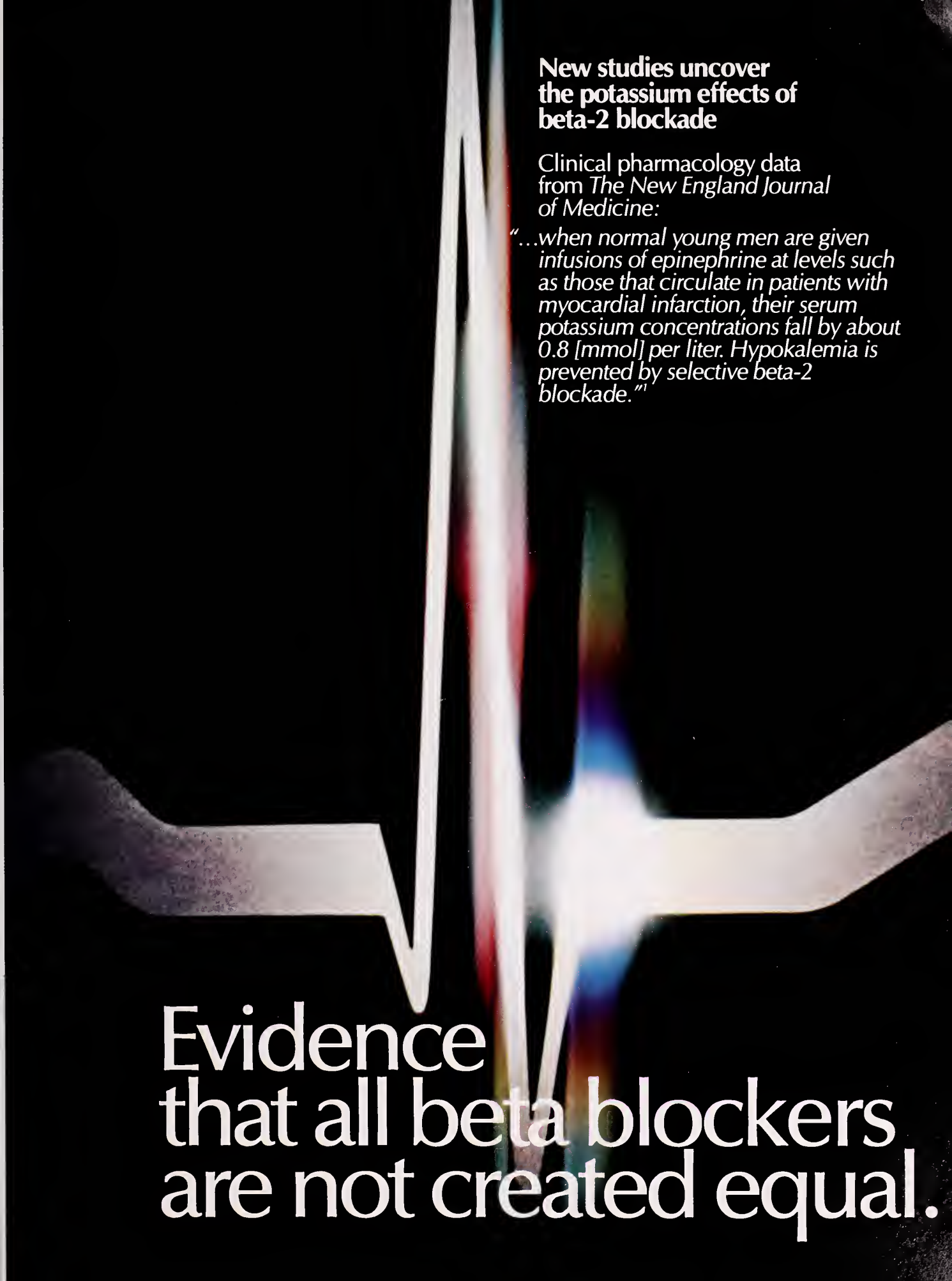
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New studies uncover the potassium effects of beta-2 blockade

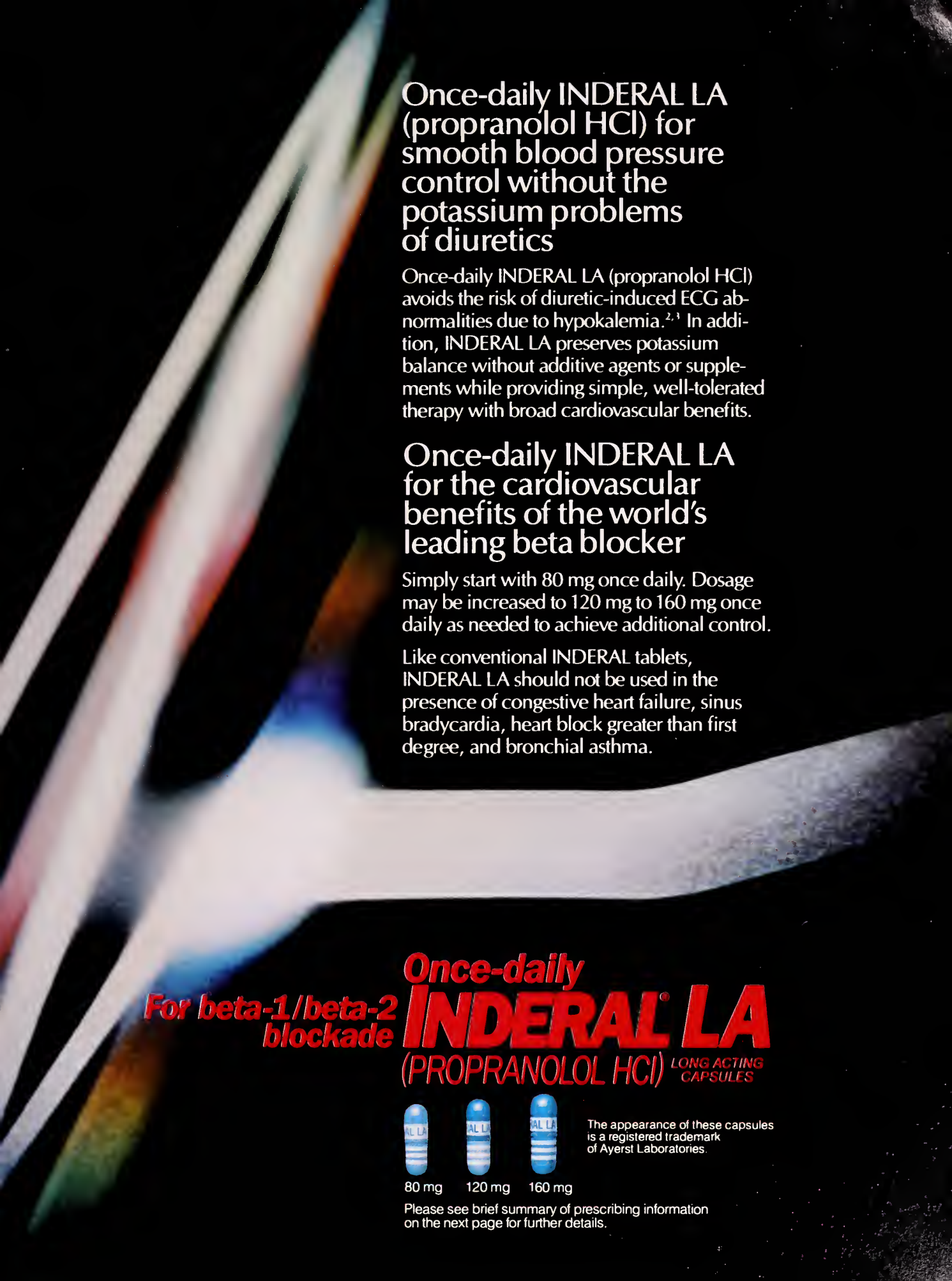
Clinical pharmacology data from *The New England Journal of Medicine:*

"...when normal young men are given infusions of epinephrine at levels such as those that circulate in patients with myocardial infarction, their serum potassium concentrations fall by about 0.8 [mmol] per liter. Hypokalemia is prevented by selective beta-2 blockade."[1]

Evidence that all beta blockers are not created equal.

Right from the start in hypertension...





Once-daily INDERAL LA (propranolol HCl) for smooth blood pressure control without the potassium problems of diuretics

Once-daily INDERAL LA (propranolol HCl) avoids the risk of diuretic-induced ECG abnormalities due to hypokalemia.[2,3] In addition, INDERAL LA preserves potassium balance without additive agents or supplements while providing simple, well-tolerated therapy with broad cardiovascular benefits.

Once-daily INDERAL LA for the cardiovascular benefits of the world's leading beta blocker

Simply start with 80 mg once daily. Dosage may be increased to 120 mg to 160 mg once daily as needed to achieve additional control.

Like conventional INDERAL tablets, INDERAL LA should not be used in the presence of congestive heart failure, sinus bradycardia, heart block greater than first degree, and bronchial asthma.

For beta-1/beta-2 blockade

Once-daily

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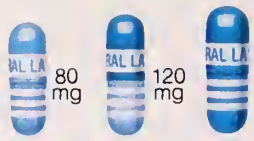
(PROPRANOLOL HCl) LONG ACTING CAPSULES

80 mg 120 mg 160 mg

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Please see brief summary of prescribing information on the next page for further details.

Once-daily For beta-1/beta-2 blockade INDERAL® LA (PROPRANOLOL HCl) LONG ACTING CAPSULES



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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*

INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension, it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General.* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy. Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular. bradycardia, congestive heart failure, intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System. lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia; visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal. nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic. pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory. bronchospasm.

Hematologic. agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Autoimmune. In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous. alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



STATISTICS

Sir Berkeley Moynihan (1865-1936) once stated that "statistics will prove anything, even the truth." Someone else has observed that medical statistics are like a bikini. What they reveal is interesting but what they conceal is vital.

It is not my purpose to ridicule the use of statistics. Yet it seems they often constitute the entire thrust of a medical essay. The most erudite medical journals dote on their statistical analyses. In fact, some employ statisticians to test all data to be published to be sure of their statistical significance and accuracy. There is nothing wrong with that. Some medical manuscripts are filled with meaningless numbers that impress no one other than the authors. Occasionally, a paper has been found to have as its basis trumped-up data which is not true.

Often scientific papers will serve their educational purpose through a concise presentation of the major premise and a recitation of the simple facts without a lot of numbers. This straightforward approach is usually well accepted by the readers.

Recently I read a quotation about a writer who "uses statistics as a drunken man uses lampposts — for support rather than for illumination." There is a need for statistics to be sure. The object of their use is to condense information covering large groups of allied facts. In tabular form they are concise in nature and suitable for appropriate reference.

Most readers of the popular medical journals probably pay minimal attention to statistical data associated with an article and think little about it fulfilling the proof criteria. Yet, those data, presented in a concise manner, may be used at the pleasure of the student when there is a need. Wilder Penfield observed that "the undergraduate prefers brief and positive statements of the 'facts' made by a professor who hides his doubts beneath a mantle of shining authority. It gives the student such a sense of security, especially in regard to examinations."

Our patients may or may not be impressed with statistics. It depends on what the numbers do to support their hopes. If an illness is severe, what might be the chances of beating the odds. The patient may have no desire to evaluate the evidence the physician may present to explain or prove a simple fact. The patient desires one simple answer — *how does it affect me individually?* The patient hopefully has faith in his physician; "there can be no scientific dispute with respect to faith, for science and faith exclude one another." (Rudolph Vischow, 1821-1902).

> ***"Medicine is a changing art and science. What may be valid statistics today could be totally refuted tomorrow."***

Statistics may or may not be significant. The author must prove that the numbers have significance. The reader must decide if he or she wants all the data or only just the conclusions. In most instances, the patient is not the least bit impressed with the numbers; he wants to know his state of well-being and in general what his future has in store for him as an individual.

Medicine is a changing art and science. What may be valid statistics today could be totally refuted tomorrow. When we consider this fact, the words of Chauncey D. Leake have meaning: "Let us remember always that whatever truth we may get by scientific study about ourselves and our environment is always relative, tentative, suspect to change and correction, and that there are not final answers." — N.Y. State J. of Med. 60:1496, 1960. — M.E.A.

Historical Vignettes

LOOKING BACK

There is a certain fascination with history. Often we appreciate it more as we mature personally. I know that matching dates and events in high school history was not my favorite thing to do. Now, however, my interest in history, and maybe yours, has increased, particularly as it relates to medicine.

This year we are privileged to publish the 75th volume of the JOURNAL OF THE IOWA MEDICAL SOCIETY. You are reminded that in 1984 our name was changed to IOWA MEDICINE.

In commemoration of our 75th anniversary, we propose to salute the past. This is being done in cooperation with and in recognition of the interest of the IMS Historical Committee.

What we have done is browse through our first volume of the IMS JOURNAL. We were fascinated, as we think you will be, with what was going on medically in Iowa 75 years ago. We have selected various excerpts from the first volume for reprinting in 1985. The forthcoming historical vignettes will depict the medical knowledge of the day; say something about the economics or ethics at that time, and comment on activities of the Iowa Medical Society.

We encourage you to read the first one below and those to follow. Please join us in looking forward to *Looking Back.* — M.E.A.

TOBACCOISM

The disease tobaccoism is extremely insiduous and comes on unawares; it is present long before the afflicted has noticed that his heart, his optic nerve or digestive organs are affected; that this positively must be true is shown by the fact that when the heart is affected by tobacco, it receives the poison from some other organ or specific system, which is usually the nervous system or the circulation. I repeat it, that long before these organs or any organ is affected to a noticeable degree, the moral tone has had its poisoned effect, has had its impairment thru the use of tobacco and its effects on the nervous system and the brain. — **Samuel Bailey, M.D.,** Mt. Ayr, Iowa, *Tobacco — its effects.* JOURNAL OF THE IOWA STATE MEDICAL SOCIETY 1911; Vol 1:55-65.

The following are excerpts from the discussion which followed presentation of the paper at the 60th session of the Iowa State Medical Society in May, 1911.

Dr. D. C. Brockman, Ottumwa: I never saw a better illustration of the truth of Dr. Bailey's statement than the remarks that have been made here, showing the lowered moral tone of the individuals who used tobacco. The very fact that my friend Dr. Sugg says that he smokes to excess, and he knows it, shows that his willpower is affected by it. There is a side to this that is not extreme, either one way or the other. I once used tobacco to excess, I found it was hurting me, and stopped before my willpower was entirely gone.

Dr. George F. Jenkins, Keokuk: I see my friends puffing away on cigars and seeming to be happy and enjoying themselves. I can sit and think, and probably may enjoy it, but I don't look as if I was enjoying myself like the man who smokes; and consequently I feel that they get as much out of it as they lose. They undoubtedly lose something in the way of health and strength, particularly if they go to using it too young; but when you come to take it as a whole, in this day and generation when they are running after recreation, I don't know that it would be right for the doctors to array themselves against the use of tobacco.

1985 Family Practice Refresher Course

THE University of Iowa Refresher Course for the Family Physician once again occupies a premier spot in the annual lineup of continuing medical education events. The 1985 edition is scheduled for March 5-8 in Iowa City.

This conference originated in 1946 as World War II physicians resumed private practice.

The conference continues to provide family physicians with a brush-up on the old techniques and teaches them the new. Course curriculum is now devised cooperatively by the University of Iowa Continuing Education Committee, the clinical department heads, the Department of Family Practice and the Education Committee of the Iowa Academy of Family Physicians. Richard M. Caplan, M.D., associate dean of continuing medical education, has directed the refresher course since 1970.

The 1985 Refresher Course continues under sponsorship of the U. of I. CME office, the U. of I. Department of Family Practice and the Iowa Academy of Family Physicians.

Twenty-seven hours of Category I credit is allowed toward the AMA Physicians' Recognition Award for full attendance. The American Academy of Family Physicians and the American Osteopathic Association award the same credit.

The four-day session includes brief lectures, panels, small group discussions and workshops, question/answer periods, lunches with the experts and a printed course syllabus. As in the past, physicians may become certified in basic cardiopulmonary resuscitation.

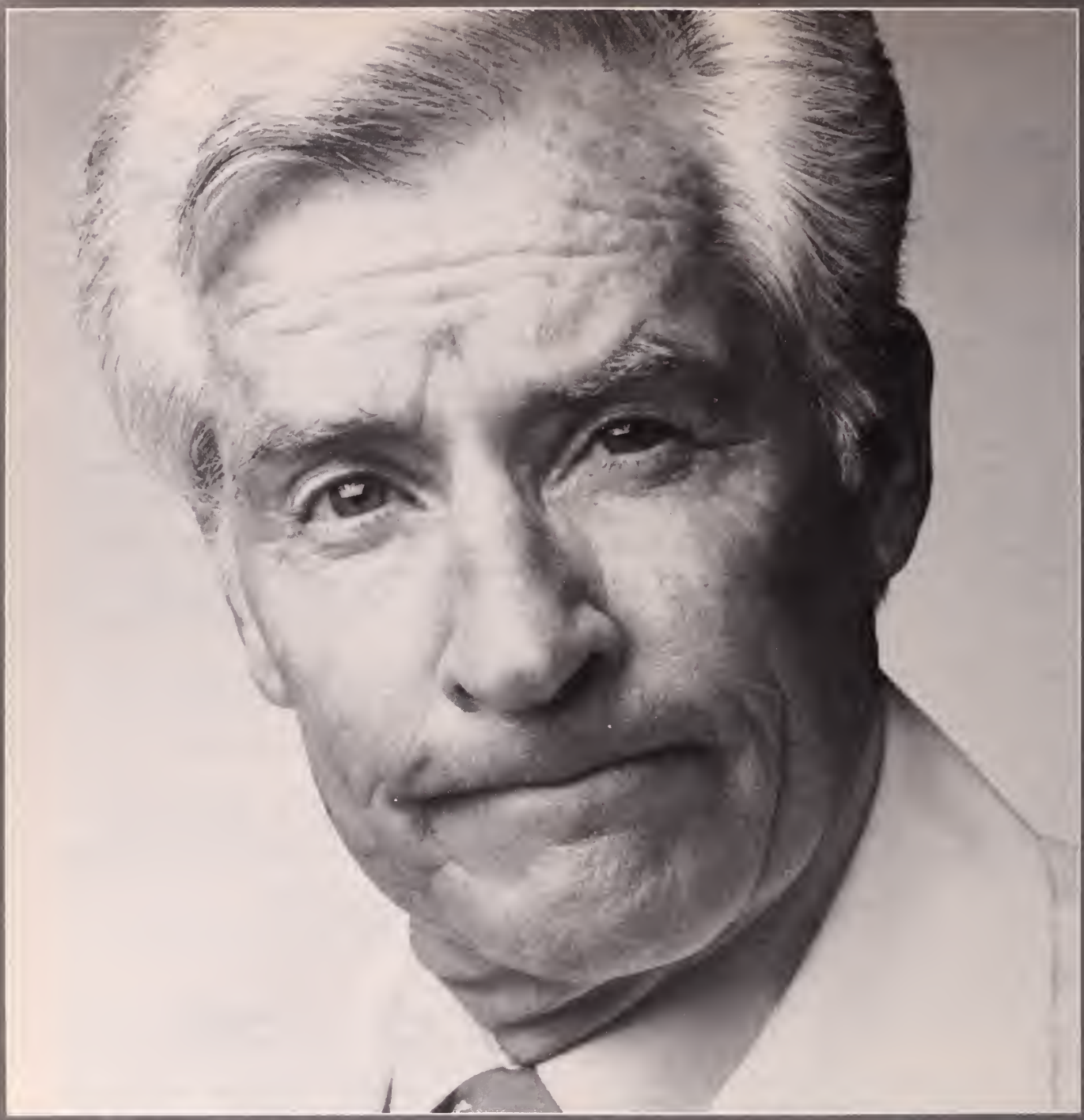
The 1985 Refresher Course offers a wide range of topics. A sampling includes:

- **Ways to Get Diabetic Patients to Do What You Want**
- **Workup for a Patient with Suspected Rheumatologic Disease**
- **Surgical Emergencies in the Infant from 1 to 24 Months**
- **Reflex Esophagitis: Medical and Surgical Management, 1985**
- **New Cardiac and Antihypertensive Drugs**
- **Dx and Rx of Thyroid Disease**
- **GI and Liver Potpourri**
- **Recognizing the Many Faces of Child Abuse**
- **What Do Colposcopy and Laparoscopy Have to Offer?**
- **Pain and Symptom Management for Terminally Ill Patients**
- **Musculoskeletal Trauma in Runners**
- **Trying to Stop Recurrences of Cystitis and Prostatitis**
- **Vaginal Delivery After C-section**
- **Preparing for Medical Testimony and Reports**
- **Childhood Hyperactivity and Its Current Treatment**
- **Vascular Headaches**
- **Crohn's Disease and Ulcerative Colitis**
- **Medical Ethics: Are There Baby Does in Iowa?**
- **Dysmenorrhea and PMS**
- **The Aging Doctor of the Aging Patient**

Nurses can earn CE credit through a special program offered at the same time. The University of Iowa will award 0.3 continuing education credits for "Depression in the Elderly," a program offered March 5. Nurses can earn 0.6 CEUs for a March 7 program, "Communicating with Children: Techniques and Strategies."

Registrants' spouses are invited to all programs.

For more information about the Refresher Course for the Family Physician, contact the Office of Continuing Medical Education, U. of I. College of Medicine, Iowa City, Iowa, 52242, or call 319/353-5763. The program begins Tuesday, March 5 at 8:15 a.m. and ends Friday, March 8 at 3 p.m.



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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



APHORISMS

APHORISMS are fun. Thought-provoking, too, and thereby instructive. I heard some that impressed me during a recent speech about medical education. The first was attributed to Alan Gregg, one of the great figures in promulgating high quality medical education in this century, and influential because of his administrative position with the Rockefeller Foundation. He said "A good education leaves much to be desired." That clever double-take statement is so consistent with the spirit of continuing medical education! In spite of the medical educational establishment's stated effort to "produce lifelong learners," I fear that some medical students and residents still feel the education they are having right now is terminal education. Happily though, I think most have internalized the idea that they will need and want to keep on learning. Another aphorism from that talk expands the idea: "Complacency is the dry rot of the spirit."

The speaker I heard quoted one of my own heroes, Thomas Jefferson, who said "Great men never feel great and small men never feel small." It was also Jefferson who urged "a wise infidelity against authority." He seems such a figure of the establishment now that we could easily forget his strident role in that great revolution against authority which established not only our nation but also established a pattern for revolts-against-authority around the world ever since. A fair amount of Jefferson's revolutionary thinking, and even his language, can be traced back to his teacher at the College of William and Mary, George Wythe, who in turn obtained many of his ideas from the great British philosopher John Locke (who was, incidentally, a physician).

Here's another aphorism from that talk: "The student doesn't become a physician — he is and remains a human being who employs a minority of his time in functioning with the skills of a physician." That is an exceedingly important, yet challenging statement when one stops to think about it, for it draws such a clear distinction between our filling a professional role and our total status as human beings who spend a majority of our time doing other things. One of the large changes I see developing in contemporary medicine is that physicians tend less to carry with them, or display full-time, the "mantle" or "aura" of being a physician. That mantle tended perhaps to suggest to both wearer and viewer that the wearer was a demigod. Granted, some modern medical activities and technical accomplishments may seem like the feats of demigods, if not gods.

> ***"In spite of the medical educational establishment's stated effort to 'produce lifelong learners,' I fear that some medical students and residents still feel the education they are having right now is terminal education."***

Even though it grows easy, with frequent exposure, to become blasé at the *tours de force* accomplished daily, we need to look in the mirror each day to see whether we are viewing omniscience and omnipotence, or only what Shakespeare described in "King Lear," a "bare, forked animal." Now that's a properly humble image to balance the demigod notion.

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

ORGANIC GOLD COMPOUNDS IN THE TREATMENT OF RHEUMATOID ARTHRITIS

ORGANIC GOLD COMPOUNDS have been used to manage rheumatoid arthritis for almost 50 years. However, many questions still remain unanswered, especially regarding their mechanism(s) of action and variations in clinical response to their administration.

Intramuscular preparations have been the only available gold compounds until auranofin was developed. Auranofin is an oral organic gold compound soon to be released. This review will compare the chemistry, pharmacokinetics, clinical efficacy, toxicity, and clinical use of parenteral gold and auranofin.

CHEMISTRY

The parenteral gold compounds presently available are (1) gold sodium thiomalate (Myochrysine-GST), an aqueous solution, and (2) Aurothioglucose (Solganol-ATG), an oil suspension. Both compounds are approximately 50% gold by weight and are water soluble. Auranofin (AF), in contrast, is 29% gold by weight and is lipid soluble, in vitro.

MECHANISM OF ACTION

The exact mechanism(s) of action of gold compounds remain unclear. They demonstrate a variety of effects on humoral and cellular immunity as well as possessing anti-inflammatory activity (See Table I).[1] Although differences exist between AF and parenteral gold (GST, ATG), it is likely their mechanism of action in vivo is similar.

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

PHARMACOLOGY

There are significant differences in pharmacokinetics between injectable gold (ATG/GST) and oral gold (AF). This should be no surprise in view of the differences in physicochemical properties, route of administration (intramuscular [IM] versus oral), dosing regimens (weekly injections versus daily oral administration), and the quantity of gold per administration (25 mg gold in a 50 mg GST injection versus 0.9 mg gold in a 3 mg AF tablet) (See Table II).[2]

CLINICAL TRIALS

Gold Sodium Thiomalate

A beneficial effect of parenteral gold therapy was first reported by Forestier in 1934. The Empire Rheumatism Council in Britain published the first double-blind, controlled trial of gold efficacy in rheumatoid arthritis in 1960.[3] This study compared 50 mg of GST IM weekly versus .005 mg GST injections weekly, each for 20 weeks. The gold-treated patients showed significantly more improvement than the placebo group in many clinical and laboratory parameters, including functional capacity, number of tender joints (gold: ↓ 54% vs. placebo: ↓ 35%), grip strength (gold: ↑ 25% vs. placebo: ↑ 9%), decrease in ESR (gold: ↓ 50% vs. placebo: ↓ 13%), and subjective assessment (gold: ↑ 38% vs. placebo: ↑ 17%) at 6 months. In 1973 the Cooperating Clinics Committee of the American Rheumatism Association confirmed these results.[4] The value of continued therapy was suggested by Shrinivasin *et al*[5] who showed that patients continuing therapy beyond 18 months showed continued slow improvement. While 60 to 80% of rheumatoid arthritis patients respond to gold by 6 months, only 41% continue the drug

after 18 months; most stopped due to toxicity, loss of benefit, or both simultaneously.

The role of gold compounds as disease-modifying drugs was suggested by the studies of Sigler *et al* (1974)[6] and Luukkainen *et al* (1977).[7] In Luukkainen's study, for example, 16% of patients who took at least 800 mg gold developed new erosions in 5 to 6 years, while 32% who tolerated only 200 mg developed new erosions. The results were reviewed by Iannuzzi in 1982,[8] who concluded that intramuscular gold compounds slowed, but did not stop, the erosive process.

Auranofin

The trials of AF included open trials, trials to establish the best dose, placebo-controlled studies, and comparisons with GST. Most trials have only been 12 months or less, with some published only in abstract form.

A daily 9-mg dose of auranofin was associated with more toxicity than 6 mg daily, while response to 2 and 4 mg daily may have been slower than 6 mg daily; thus 6 mg daily auranofin will probably be the usual dose. Auranofin is more effective than placebo in rheumatoid arthritis. Auranofin, 3 mg 2 times daily, significantly increased grip strength and decreased the number of tender and swollen joints, and the duration of morning stiffness compared with placebo. The level of IgA, IgG, IgM, and erythrocyte sedimentation rate also decreased significantly at 6 months with auranofin compared to placebo.[2]

Most studies comparing 6 mg daily auranofin versus 50 mg weekly GST show comparable efficacy as measured by the number of swollen joints, global efficacy, hemoglobin concentration, and ESR. Several studies have suggested slightly faster or slightly greater response with GST than AF.

TABLE I

EFFECTS OF ORGANIC GOLD COMPOUNDS ON ASPECTS OF IMMUNE FUNCTION, IN VITRO

	Effect	
	AF*	GST*
Human Palymarphanuclear Cell Functian		
Superaxide praductian	↓	↔
Phagacytasis	↓	↔
Aggregatian	↓ (20-100%)	↓ (35%)
Lysasamal enzyme release	↓	↓
Mananuclear Cell Functian		
Mananuclear phagacytasis	↓	↔
Natural killer cell activity	↑	↑
Manacyte chemataxis	↓ (92%)	↓ (46%)
Humaral Immunity in Humans		
Immunaglabulins G, A, M	↓	↓
Cellular Immunity in Humans		
Phytahemagglutinatian stimulatian	↓	↓, ↑
Cancanavalin A stimulatian	↓	↓

TABLE II

COMPARATIVE PHARMACOKINETICS OF ORGANIC GOLD COMPOUNDS

	AF*	GST*
Range af usual steady-state serum gald cancentratians (ug/ml)	0.3-1.0	1.0-5.0
Pratein binding (% baund)	60	95
Raute af excretian (% af tatal)		
Renal	12	60-90
Enteric	88	10-40
Eliminatian half-life in serum (days)	17-26	5.5
Tatal bady half-life (days)	57.6-80.9	30-168
Accumulatian after 20 weeks af therapy (mg)	0-66	300
Blaad ta synavial fluid ratia	1.7	1.7

* AF = auranafin
GST = gald sadium thiamalate

CROSSOVER FROM GST TO AURANOFIN

A few controlled crossover studies transferred rheumatoid arthritis patients who were stable on GST (50 mg every 2 to 4 weeks) to AF, 3 mg twice daily. In one study most patients did not experience worsening of disease activity. However, another small trial of 11 patients found that all 11 patients who crossed over to AF had discontinued by 2 years, secondary to inefficacy or toxicity.[1] At present it is unclear whether patients can be switched from GST to AF, or vice versa, without losing benefit.

AF does not appear to slow erosive disease over 1 to 2 years while GST does; however, the number of patients in these trials is small and the results are not definitive.[2]

COMPARISON WITH OTHER DISEASE-MODIFYING DRUGS

Gold compounds have been compared with penicillamine, chloroquine, and azathioprine. In one study, azathioprine, chloroquine, and

(Please turn to page 76)

TABLE III

ADVERSE DRUG REACTIONS REQUIRING DISCONTINUATION

System	Percent of Drug Recipients Auranafin (n = 3,082)	GST and ATG (n = 465)	Comments
Skin			
Rosh	2	11	Pruritic skin rash is the most common side effect with IM gald. With reduction of dose gald con often be restorted, if rosh is mild.
Pruritis	1.2	7.3	
Mucaus Membranes			
Stamotitis	1	3.7	May respand to reduction of dasage.
Gostraintestinol			
Diorrhea	3	0.9	May respond ta reduction in dose, variable dosing regimen, increased dietary fiber, symptomotic treatment, arol iron administration.
Renal			
Prateinuria	1.6	2.2	Nephratic syndrame associoted with membranaus glomerulonephritis. Reversible upon withdrowal. Isalated hemoturia without proteinuria is rare with gold therapy.
Hematological			
Thrambocytapenia	0.3	0.6	Mechanism probable peripheral consumption.
Leukopenio	0.4	1.1	
Aplasio	—	<0.5	
TOTAL	11	25	

gold were equally effective with respect to joint tenderness, grip strength, and morning stiffness.[9] Parenteral gold has similar clinical efficacy and less toxicity than D-penicillamine. Several studies comparing AF with penicillamine found similar efficacy but fewer side effects with auranofin.

A trial of antimalarials (usually hydroxychloroquine) is preferred by some before gold since many believe hydroxychloroquine to be somewhat less potent, but less toxic, than gold compounds. Because there is concern over the long-term risks of immunosuppressive drugs and increased side effects with D-penicillamine, gold compounds are frequently the first choice of the disease-modifying agents.

SIDE EFFECTS

Toxicity remains the major limitation of gold compounds in treating rheumatoid arthritis. The incidence of side effects with auranofin is similar to parenteral gold but side effects are less severe and less apt to require withdrawal from therapy (See Table III).[2]

In most studies, 15 to 30% of patients discontinue parenteral gold during the first year due to toxicity. The toxicity commonly occurs after 400-800 mg cumulative doses, but may occur at any time. The incidence of side effects increases if doses more than 50 mg IM weekly are used, but side effects do not decrease when 25 mg IM weekly GST is used.[10] Further, the weight of evidence shows that neither toxicity nor efficacy is related to serum levels.

Auranofin causes withdrawal due to toxicity in 11% of patients. Most auranofin-related side effects are not dose related, but the incidence of diarrhea, auranofin's most troublesome side effect, increases with higher doses.

Predicting toxicity in an individual patient is not usually possible. Eosinophilia is commonly associated with toxic reactions, but is not a reliable predictor, for it may be absent in some toxic reactions and present without toxicity. Recent retrospective studies show patients who have B-lymphocyte alloantigens HLA-DRW3 or B8 are at increased risk of developing proteinuria with parenteral gold therapy.

CLINICAL USES

Before disease-modifying antirheumatic drugs are used, the diagnosis of rheumatoid arthritis must be *firmly* established. Most rheumatologists would use conservative therapy (including rest, physical therapy, and nonsteroidal anti-inflammatory drugs) for at least 6 months without a satisfactory response before starting gold therapy. It is worth emphasizing

that patients must have active disease before the toxicity of gold therapy justifies its use.

At present aurothioglucose (Solganal) is used before gold sodium thiomalate (Myochrysine) because ATG causes fewer nitritoid reactions and, possibly, causes fewer mucocutaneous side effects. Auranofin's place in the rheumatologic armamentarium will depend on further studies and the individual patient.

DOSING

Intramuscular Gold Compounds

A 10-mg IM test injection is given when starting therapy; 1 week later 25 mg may be given, then 50 mg IM is given weekly. Conventionally 20 weekly injections are given, and then if there is a positive response, the frequency of dosing is slowly decreased. Some patients may respond to 25 mg weekly and others may benefit from more than 20 consecutive weekly injections of 50 mg. Clinical response is delayed 10 to 20 weeks. Intramuscular gold is discontinued if there is no response after 1,000 mg total dose. Appropriate laboratory tests (complete blood counts with platelet counts and urinalysis) and clinical assessment before each gold dose will reduce the risk of severe toxicity.

Auranofin

Auranofin will be given as 3 mg tablets, twice daily. The total daily dose can be taken at one time but this is associated with more frequent diarrhea. Like intramuscular gold, auranofin's effect is delayed for 10 to 20 weeks. Laboratory monitoring should include complete blood count and urinalysis every other week for 3 to 6 months, then monthly thereafter.

Gold compounds will remain the mainstay of the disease-modifying drugs in the treatment of rheumatoid arthritis. Auranofin will add the convenience of oral administration, reduced expense for monitoring, and less overall toxicity, but it is not clear if it is as effective as parenteral gold, so its place in the rheumatologic armamentarium remains unclear. — THEODORE W. ROONEY, D.O., *Fellow Associate, and* DANIEL E. FURST, M.D., *Associate Professor, Division of Rheumatology, Department of Internal Medicine.*

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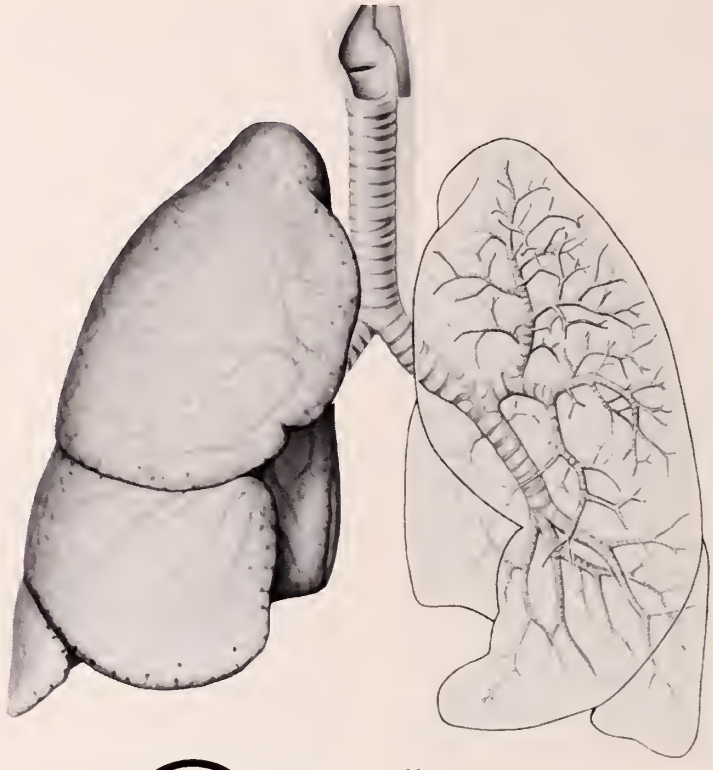
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RECENT BOOKS

Bergman, Ronald A., Thompson, Sue Ann and Afifi, Adel K., 1984, *Catalog of Human Variation,* Urban & Schwarzenberg, Baltimore and Munich, Special Bound, $14.50. (Doctors Bergman and Thompson are Professors of Anatomy at the University of Iowa; Doctor Afifi, Professor of Human Morphology and Medicine (Neurology) at the American University of Beirut. This catalog will be of great value to anatomists and surgeons, for it comprises a monumental compilation of known variations of human anatomy.)

Sahu, Saheb, 1984, *Neonatal Medicine for Family Physicians and Neonatal Nurses,* published by author, Des Moines, Iowa, $12. (The author indicates this small handbook has been written as a guide to the non-pediatrician-neonatologist, designed for a brief guide to family practitioners, medical students and nurses. The discussions are brief and concise, the tables useful, and adequate references are supplied.)

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offers effectiveness against the major causes of bacterial bronchitis

H. influenzae, *H. influenzae*, *S. pyogenes*
(ampicillin-susceptible) (ampicillin-resistant)

Brief Summary Consult the package literature for prescribing information

Indications and Usage Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae* and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: *General Precautions* — If an allergic reaction to Ceclor® (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy — *Pregnancy Category B* — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor® (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[061782R]

Note Ceclor® (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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SUCCESS WILL DEPEND ON YOU!

(Continued from page 51)

called Part A. It protects insureds from claims arising out of injury to any person as a result of a medical incident. Coverage is also provided for professional employees of the insured as well as corporate, professional association or partnership liability.

Office premise liability is also furnished as part of the IPMIT/AMACO program. It is referred to as Part B.

A third coverage component is called defendant's reimbursement and is provided to cover expenses incurred as part of any litigation involvement. It is referred to as Part C.

OCCURRENCE AND CLAIMS-MADE

The IPMIT/AMACO program includes both the traditional *occurrence* form of coverage and the more recently developed *claims-made* option. Applicants may select the form most appropriate to their individual circumstances.

Iowa physicians now covered under *claims-made* may apply for IPMIT/AMACO *claims-made* coverage and obtain *prior acts* protection. In this instance the conversion will be to the maturity level of the policy held by the applying physician. This provision eliminates the need for any physician converting to the IPMIT/AMACO *claims-made* coverage to purchase the endorsement or "tail" from his preceding carrier.

ELIGIBILITY REQUIREMENTS FOR COVERAGE

The physician applying for IPMIT/AMACO coverage must:

- **Be licensed by the Iowa State Board of Medical Examiners.**
- **Be a member of the Iowa Medical Society.**
- **Practice a majority of the time in Iowa.**
- **Meet the IPMIT/AMACO underwriting requirements.**

All applications will be reviewed carefully as to education, type of practice, previous claims experience, etc. Each application will be reviewed by Iowa physicians. Any applicant whose request for coverage is declined will have opportunity to ask for an insurability hearing.

CLASSIFICATION OF INSUREDS

Designation of the proper risk classification is most important. This is done on the basis of the specialty of the applicant. Additional consideration is given to any special procedures or activities which represent extra exposure. This selection of classification is made initially by the applying physician with review and follow-up inquiry undertaken as necessary.

THE RATE OR PREMIUM STRUCTURE

1985 rates for IPMIT/AMACO coverage will be held at the 1984 premium levels in effect under the IMS/Aetna program. Of all premiums collected by IPMIT, 30% will be assigned as contributions to surplus. Various factors, e.g., discounts for new to practice, multiple physician offices, etc., must be evaluated prior to offering a precise rate quotation. Physicians are urged to contact Mr. Dale Hoing at IMS Services for specific premium quotations. Premium payments are planned on a quarterly basis.

CLAIMS MANAGEMENT & RISK CONTROL

While AMACO has the ultimate responsibility for resolving claims, the handling of claims will include active and important participation by Iowa physicians. In addition, experienced and successful Iowa defense attorneys will provide the necessary legal counsel.

Risk control will be a vital element of the IPMIT/AMACO program. It will include a "hotline" reporting mechanism for use by insured physicians to communicate any problems and request immediate counsel. The provision of educational materials and seminars will be a significant additional aspect of the risk management program.

REMEMBER THE EXTENDED OBJECTIVE

The goal of our new IMS-sponsored program is to accumulate sufficient capital through the IPMIT mechanism to form a successor Iowa insurance company to be owned by the Iowa Medical Society. It is expected this will be possible in three to four years. All IPMIT accumulated surplus and assets will inure to the Iowa Medical Society to accomplish the preceding objective.

Information of Interest

STATE DEPT. OF PUBLIC HEALTH

ASPERTAME COMPLAINTS

IOWA PHYSICIANS who have patients who complain about not feeling good after having consumed aspertame (pronounced as-PER-tame), the non-sugar sweetener marketed as Nutrasweet and Equal, should refer the complaints to the Food and Drug Administration (FDA) office in Des Moines. FDA will accept the complaints for continued review.

Last February, FDA went to the U.S. Centers for Disease Control (CDC) in Atlanta and asked their help in evaluating complaints about aspertame. Although the complaints amounted to only a trickle (106 in the first 6 months of 1983 to 248 in the last 6 months), CDC agreed to help.

Last month, CDC announced it had concluded an evaluation of 517 complaints. In all, FDA received only 592 complaints of ill effects after consuming the product.

The CDC investigation had 2 major purposes: (1) to provide a descriptive analysis of the symptoms reported and the epidemiologic characteristics of the persons reporting those symptoms; and (2) to determine whether specific individual symptoms or constellations of symptoms were reported with enough consistency to indicate where further clinical studies, if necessary, would be most productive.

Up to 100-million Americans are now consuming aspertame, due to the massive advertising of Nutrasweet on TV pushing soda pop.

Using an 18-page medical questionnaire, consumers answered questions on consumption rates, types and duration of symptoms, dietary habits and other such data needed for a thorough investigation. CDC reported most of the complaints were mild in nature and common to most complainants. Sixty-seven percent of those questioned complained of headaches, dizziness and mood alterations; 24% of upset stomaches, diarrhea and other gastrointestinal problems; 15% of rashes and other allergic reactions; 6% of changes in menstrual patterns and 9% of a combination of various symptoms. Some people complained of more than 1 symptom. Few complainants sought medical attention.

Of the 517 interviewed complainants 96% were white, 76% female, and 79% were between the ages of 21 and 60 years. Reports came from all geographic regions of the country with a heavy concentration from Arizona.

CDC reported the data "does not provide evidence for the existence of serious, widespread, adverse health consequences attendant to the use of aspertame."

Most of the complaints were received by FDA in the last 6 months of 1983 and the first 4 months of 1984, following extensive publicity given to the sweetener, which prompted CDC to comment "some reports are undoubtedly due to the coincidence of symptoms and aspertame consumption and others may be due to the suggestibility of some people," but the study did not rule out the possibility of an "as yet undefined sensitivity of some individuals to aspertame in commonly consumed amounts."

Aspertame was developed by G. D. Searle Co. of Skokie, Illinois. It is made by combining 2 elements found naturally in protein.

In summary, the study found the complaints were mild and quite common to the general population. However, FDA will be happy to receive any future complaints patients present to their physicians. Contact the FDA office in Des Moines: Federal Building 50309, or call 515/284-4339.

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

Angina comes in many forms...



So does

SORBITRATE®

(ISOSORBIDE DINITRATE)

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See following page for brief summary of prescribing information.

SORBITRATE®
(ISOSORBIDE DINITRATE)

Please consult full prescribing information before use. A summary follows:

INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg, for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg), Chewable Tablets (5, 10 mg), Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

STUART PHARMACEUTICALS
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STR-2282

December 1984 Morbidity Report

Disease	Dec. 1984 Total	1984 to Date	1983 to Date	Most Dec. Cases Reported From These Counties
Amebiosis	4	67	39	Henry, Haword, Johnson, Polk
Brucellasis	1	3	6	Decatur
Chickenpax	652	7530	6200	Scattered
Campylobacter	23	332	365	Scattered
Cytomegolovirus	0	12	16	
Eotan's Agent infectian	0	34	117	
Encepholitis, virol	1	32	57	Winnishiek
Erythemo infectiosum	0	52	27	
Gostroenteritis (GIV)	1887	14197	12948	Scattered
Giordiasis	35	403	345	Scattered
Hepatitis, A	5	60	31	Dallos, Polk, Tama, Winnebogo
Hepotitis, B	10	108	90	Scattered
Hepatitis, Non A-B	1	20	40	Woodbury
Hepotitis type unspecified	0	10	13	
Herpes Simplex	65	932	1045	Scattered
Herpes Zoster	0	2	6	
Histaplosmosis	0	19	16	
Infectious mononucleosis	34	182	213	Scottered
Influenzo, lob confirmed	0	176	207	
Influenza-like illness (URI)	3281	41039	40990	Scattered
Legionellosis	0	4	7	
Molorio	0	2	4	
Meningitis				
oseptic	7	67	143	Scottered
bacteriol	13	124	152	Scottered
meningococcal	1	23	20	Mahoska
Mumps	1	26	49	Pottowattomie
Pertussis	2	15	9	Mohosko, Wopello
Robies in onimols	10	150	201	Scottered
Reye Syndrome	0	2	2	
Rheumatic Fever	0	0	2	
Rubella (German measles)	0	1	0	
Measles	0	0	0	
Salmonellosis	8	247	338	Scattered
Shigellosis	1	98	67	Dubuque
Toxic Shock Syndrame	0	13	17	
Tuberculosis				
total ill	6	68	65	Scattered
bact. pos.	6	62	46	Scottered
Typhaid Fever	0	0	0	
Venereal diseoses:				
Ganorrheo	377	4574	4620	Scattered
Syphilis	0	11	23	

Other Non-Reportable Diseases: Chlamydio — 2, Johnson; Clonorchis — 1, Decatur, 3, Siaux; Ureoplosmo Ureolyticum — 1, Black Hawk, 1, Dubuque, 1, Cerro Gardo, 1, Clay, 5, Johnson, 2, Polk, 1, Van Buren.

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J-4044 January 1984


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With Isoptin, fatigue, bradycardia and mental depression are rare. Unlike beta blockers, Isoptin can safely be given to patients with asthma, COPD, diabetes or peripheral vascular disease. Serious adverse reactions with Isoptin are rare at recommended doses; the single most common side effect is constipation (6.3%).

Cardiovascular contraindications to the use of Isoptin are similar to those of beta blockers: severe left ventricular dysfunction, hypotension (systolic pressure <90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no artificial pacemaker is present) and second- or third-degree AV block.

So, the next time a nitrate is not enough, add Isoptin... for more comprehensive antianginal protection without side effects which may cramp an active life style.



ISOPTIN. Added antianginal protection without beta-blocker side effects.

Please see brief summary on following page.

ISOPTIN TABLETS

(verapamil HCl/Knoll)

80 mg and 120 mg

Contraindications: Severe left ventricular dysfunction (see *Warnings*), hypotension (systolic pressure <90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no pacemaker is present), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g., ejection fraction <30%) or moderate to severe symptoms of cardiac failure. Control milder heart failure with optimum digitalization and/or diuretics before ISOPTIN is used. ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild, and controlled by decrease in ISOPTIN dose). Occasional elevations of liver enzymes have been reported; patients receiving ISOPTIN should have liver enzymes monitored periodically. Patients with atrial flutter/fibrillation and an accessory AV pathway (e.g., W-P-W or L-G-L syndromes) may develop a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D-C cardioversion. AV block may occur (3rd degree, 0.8%). Development of marked 1st-degree block or progression to 2nd- or 3rd-degree block requires reduction in dosage or, rarely, discontinuation and institution of appropriate therapy. Sinus bradycardia, 2nd-degree AV block, sinus arrest, pulmonary edema, and/or severe hypotension were seen in some critically ill patients with hypertrophic cardiomyopathy who were treated with ISOPTIN. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of overdosage. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, patients should be monitored closely. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function or in patients who have also recently received methyldopa. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patient carefully monitored. ISOPTIN may have an additive hypotensive effect in patients receiving blood-pressure-lowering agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C.* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor, and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block—3rd degree (0.8%), bradycardia (HR<50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%). The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: confusion, paresthesia, insomnia, somnolence, equilibrium disorders, blurred vision, syncope, muscle cramps, shakiness, claudication, hair loss, maculae, and spotty menstruation. Overall continuation rate of 94.5% in 1,166 patients. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in 80 mg and 120 mg sugar-coated tablets. July 1982 2068

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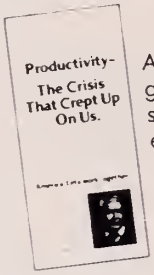
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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Ala Daghestani has been elected president of the medical staff at Mercy Hospital Medical Center in Des Moines. Other officers are **Dr. Paul R. Holzworth,** secretary-treasurer; and **Dr. James M. Caterine,** president-elect. All are Des Moines physicians. . . . New officers of the Clinton County Medical Society are **Dr. George D. Aurand,** president; **Dr. John E. Dixon,** vice president; and **Dr. James Lehman,** secretary-treasurer. All are Clinton physicians. . . . **Dr. Thomas E. Jessen,** Newton, is a recent recipient of a distinguished service award from the Iowa Football Coaches Association. . . . **Dr. Kenneth M. Johannsen** has been named chief of staff at the Buena Vista Hospital in Storm Lake. Other officers are **Dr. James E. McCabe,** vice president and **Dr. Thomas E. Shea,** secretary-treasurer. All are Storm Lake physicians. . . . **Dr. Robert S. Hranac,** Estherville, has been named Physician of the Year by the Iowa Health Care Associaiton. Nominated by the Estherville Good Samaritan Center, Dr. Hranac was cited for the genuine concern shown his patients and their families.

Dr. Brian R. Kay has been named assistant medical director for The Bankers Life in Des Moines. Dr. Kay received the M.D. degree at the U. of I. College of Medicine. Prior to joining

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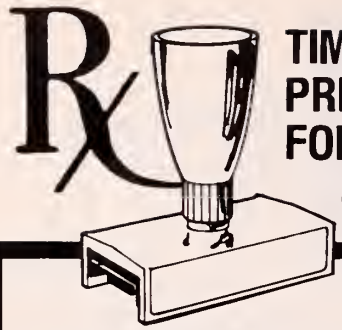
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The Bankers Life, he was a resident physician at the University of Iowa Hospitals and Clinics in Iowa City. . . . **Dr. Timothy D. Stryker** has opened an endocrinology clinic in Fairfield. Dr. Stryker received the M.D. degree; interned and completed his residency at Vanderbilt University in Nashville, Tennessee. For the past 2 years, he has been associated with Tufts New England Medical Center in Boston, Massachusetts. . . . **Dr. William C. Granger** and **Dr. Thomas Zimmerman** have joined the Nevada McFarland Clinic. Dr. Granger received the M.D. degree at the U. of I. College of Medicine and served his family practice residency at Sparrow Lansing Hospital in Lansing, Michigan. Prior to locating in Nevada, he was associated with the Mason General Hospital in Mason, Michigan. Dr. Zimmerman received the M.D. degree at the University of Nebraska School of Medicine in Omaha and served his family practice residency in the United States Navy at Camp Pendleton, California. . . . **Dr. Jeff Bodin** has joined the medical staff at Shenandoah Memorial Hospital. Dr. Bodin received the M.D. degree at the University of Minnesota School of Medicine in

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Minneapolis; interned at the U. S. Public Health Service Hospital in Boston, Massachusetts and completed his internal medicine residency at the U. S. Public Health Service Hospital in Boston and Waltham City Hospital in Waltham, Massachusetts.

DEATHS

Dr. Thomas A. Bond, 75, of Clearwater, Florida, formerly of Des Moines, died October 21 in Clearwater. Dr. Bond received the M.D. degree and served his anesthesiology residency at the University of Minnesota Medical School. He was a member of the American Society of Anesthesiologists and the Iowa Society of Anesthesiologists.

Dr. Donald L. Cross, 79, Boone, died November 8 at the Eastern Star Masonic Home. Dr. Cross received the M.D. degree at the University of Louisville Medical School in Kentucky and interned at Chicago Maternity Center. He began medical practice in Boone in

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1946, retiring in 1972. Dr. Cross was a member of the American Academy of Family Physicians and life member of the Iowa Medical Society.

Dr. Allen C. Starry, 94, longtime Sioux City physician, died November 20 in a Sioux City hospital. Dr. Starry received the M.D. degree at the University of Michigan Medical School and served his pathology residency in Denver, Colorado. He served as Sioux City health director for many years and was a member of the Iowa Association of Pathologists.

Dr. George A. Paschal, 79, Webster City, died December 18 at Crestview Manor in Webster City. Dr. Paschal received the M.D. degree at the U. of I. and interned at University Hospitals. He began his medical practice in Stratford in 1932 and relocated in Webster City in 1946. Dr. Paschal was a past president of the Hamilton County Hospital medical staff and a life member of the Iowa Medical Society.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Who Sits The Exams!

A DECEMBER headline in the DES MOINES REGISTER article read "Two doctors accused in testing fraud." The story reported on a New York man and woman being indicted for using phony credentials to qualify for Iowa medical examinations.

Two obvious questions arise: How did this happen and, more importantly, what can be done to assure that only properly qualified individuals take the Iowa medical exam?

"U.S. District Attorney Guy Cook says a state board could have done little to detect fraud in these cases." This is the comment of Ron Saf, executive director of the Iowa State Board of Medical Examiners.

"We had diplomas from them. One application even had a photo, certified by the dean of the medical college she allegedly attended. It said she was a graduate of this particular school," explains Saf.

The two applicants seeking authority to take the Iowa exam bought their diplomas from an individual who is now serving a federal prison term for fraud and conspiracy. He was convicted of falsifying medical school transcripts. The postal authorities, suspicious of his activities, investigated and found files of information on purchased diplomas. Now 60 others are being investigated to see if they used false information in applying to take medical exams in Iowa.

"Both of the individuals cited in the paper took the Iowa exam before the new requirements were imposed," Saf says. Now applicants must have one year of resident training or provide documentation that they have been accepted into such a program.

Further efforts to assure only qualified candidates take the Iowa medical exam were discussed in January by the Board of Medical Examiners. It is probable the Board will go further to toughen its requirements. The possibility exists the BME will require applicants to appear with their records and present documentation showing they have attended medical school.

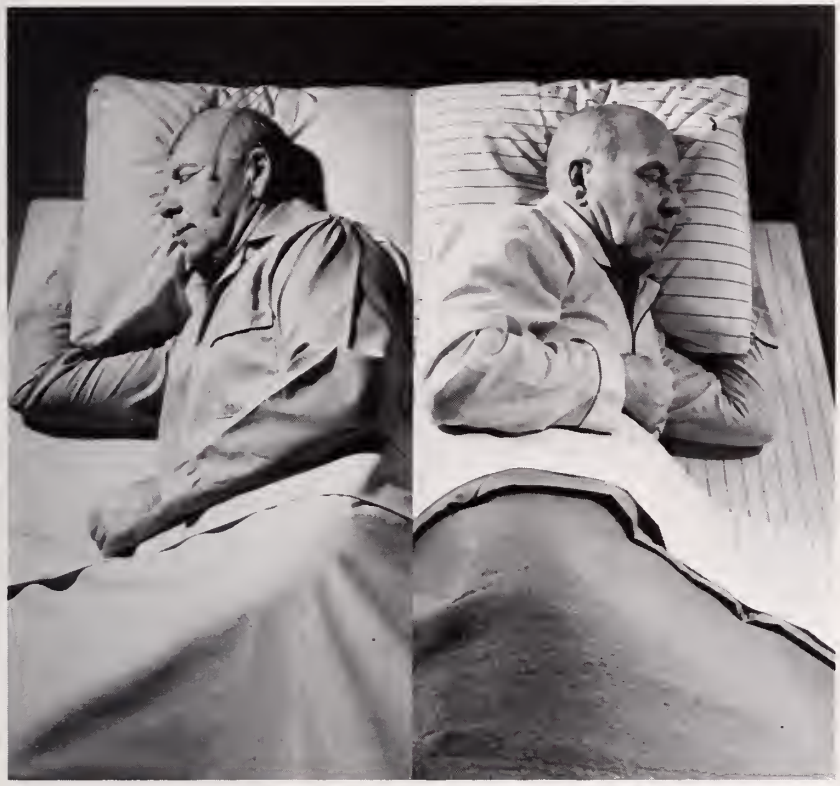
The Educational Council on Foreign Medical Graduates (ECFMG) is reviewing action taken on a number of applicants it has already certified. ECFMG certifies that foreign medical graduates have valid credentials and have passed both the ECFMG medical examination and the English comprehension examination.

"There have never been problems with American medical schools," Saf says, "but for several years we have had concern over medical schools in Mexico and the Caribbean." Resisting federal intervention, Caribbean schools have held that the responsibility for checking their qualifications lies with each state. New York, California and Puerto Rico send Caribbean medical schools their applications for licensure and make site surveys to check on the teaching staff and facilities.

The Federation of State Medical Examiners is being asked to evaluate foreign medical schools. "Our primary concern is to evaluate schools in Mexico and the Caribbean," Saf says.

Along with other concerned state boards, the Iowa Board of Medical Examiners wants to test only the qualified. Many U.S. and foreign medical graduates may find it inconvenient to appear in person to present their credentials. Foreign medical graduates may face tougher state exam requirements. Further, Mexican and Caribbean medical schools will be evaluated more extensively. All of this will take time, but these efforts deserve support. The basic goal is to license qualified physicians who will deliver quality care.

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References: 1. Kales J *et al: Clin Pharmacol Ther 12*:691-697, Jul-Aug 1971. **2.** Kales A *et al: Clin Pharmacol Ther 18*:356-363, Sep 1975. 3. Kales A *et al: Clin Pharmacol Ther 19*:576-583, May 1976. **4.** Kales A *et al: Clin Pharmacol Ther 32*:781-788, Dec 1982. **5.** Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc 27*:541-546, Dec 1979. **6.** Kales A, Kales JD: *J Clin Pharmacol 3*:140-150, Apr 1983. **7.** Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther 21*:355-361, Mar 1977. **8.** Zimmerman AM: *Curr Ther Res 13*:18-22, Jan 1971. **9.** Amrein R *et al: Drugs Exp Clin Res 9*(1):85-99, 1983. **10.** Monti JM: *Methods Find Exp Clin Pharmacol 3*:303-326, May 1981. **11.** Greenblatt DJ *et al: Sleep 5*(Suppl 1):S18-S27, 1982. **12.** Kales A *et al: Pharmacology 26*:121-137, 1983.

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Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

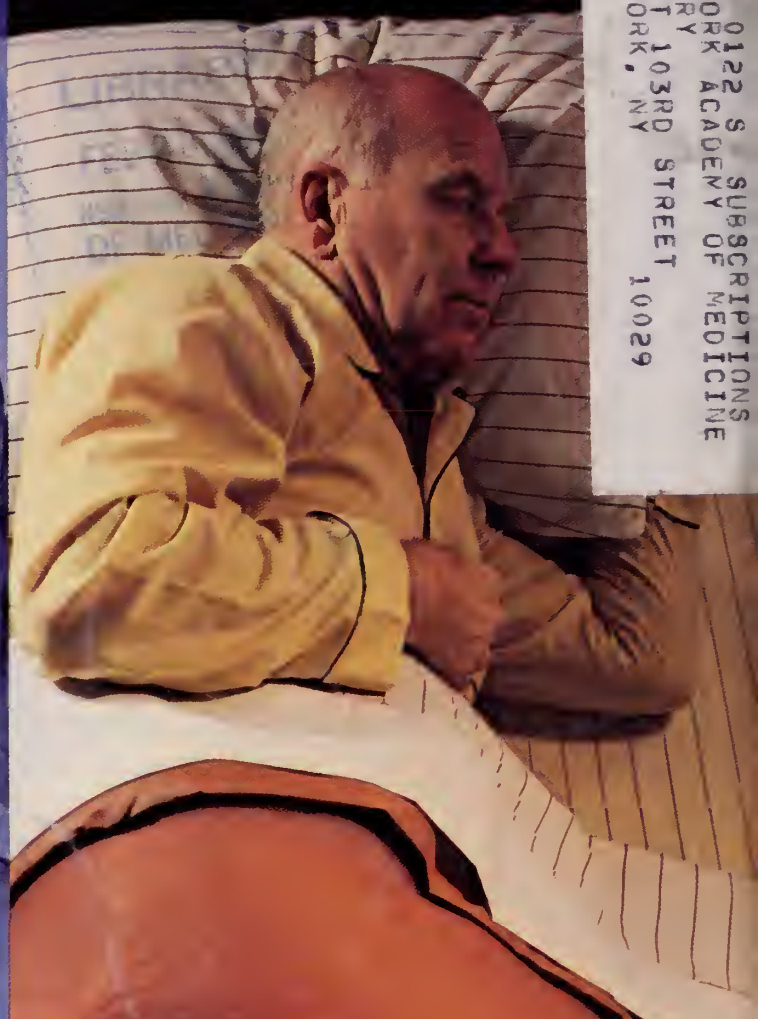
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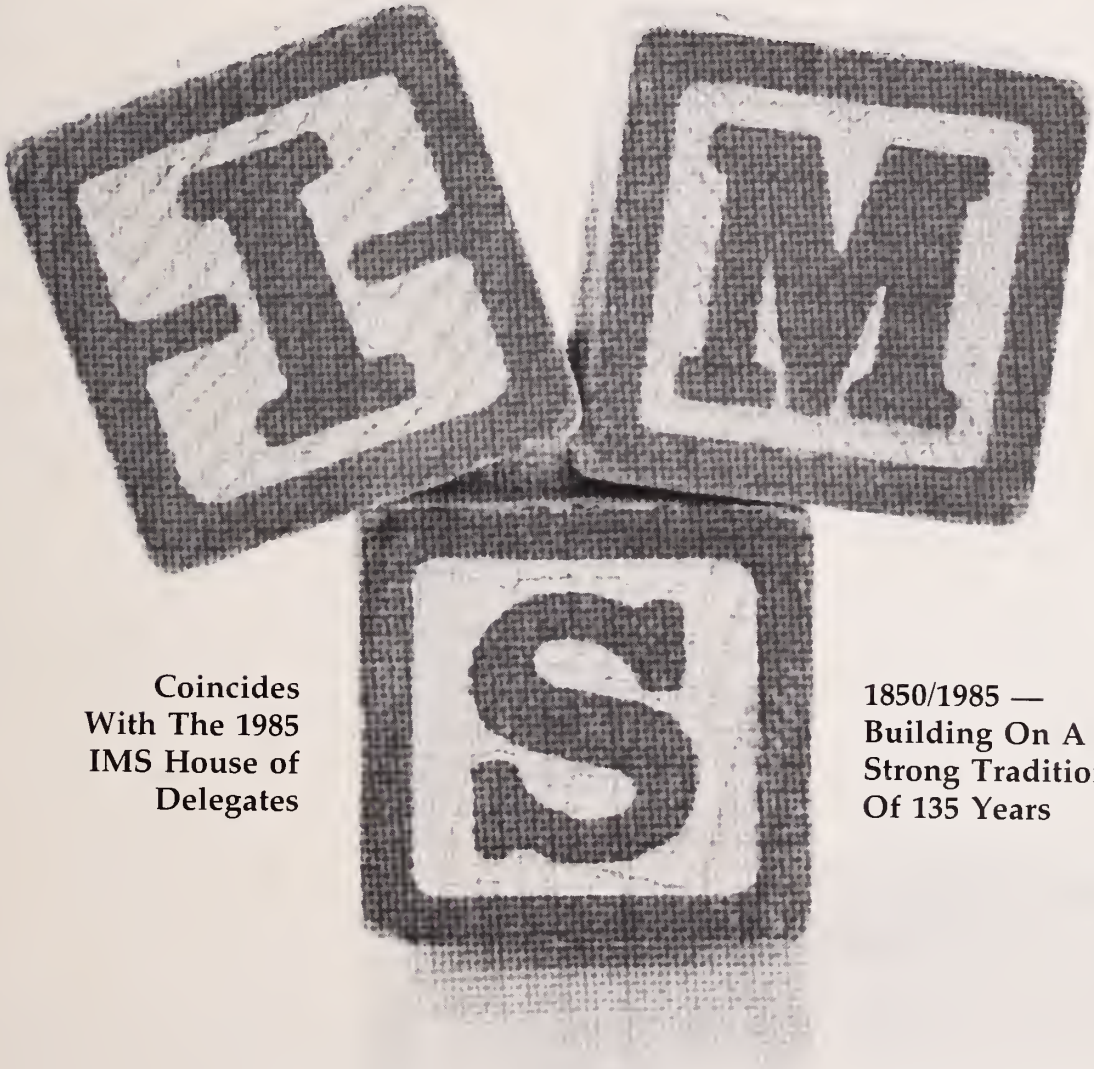
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IowaMedicine

Journal of the Iowa Medical Society

IMS Scientific Session
April 19 - 21, 1985
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Also In This Issue —

- Releasing Medical Records
- Iowa Alternate Delivery Systems

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The Prouty Company

March 1985

IowaMedicine

Volume 75 Number 3

Journal of the Iowa Medical Society

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ABOUT THE COVER



ABOUT THE COVER — Our building block motif this month is meant to focus attention on (1) the 1985 IMS Scientific Session/House of Delegates which occurs at the Hotel Savery in Des Moines April 19, 20 and 21, and (2) the 135th anniversary of the Iowa Medical Society which began its representation of the profession in 1850. Please see the special insert which contains the program for the 1985 IMS Scientific Session. All member physicians are invited and urged to attend this continuing education event in Des Moines.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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PRESIDENT'S PRIVILEGE



A CRISIS: AFFORDABILITY IN PROFESSIONAL LIABILITY COVERAGE

COST-CONTAINMENT and assurance of access to care will not be improved by the current professional liability climate. Increased numbers of claims and increased amounts of awards have been accompanied by bewildering increases in liability coverage premiums.

Reluctantly, and after careful study, the IMS Legislative Committee recommended to the Society's Executive Council that further legislative relief not be sought this year. The Executive Council agreed. Why?

The AMA has made an exhaustive study of the problem, and states such as Florida and New York have experienced significant problems in the pursuit of legislation.

Our friends in business and labor, government, insurance and consumers are faced with concern for the principle of the patient's right to seek redress even as they realize that there are increased costs of "defensive medicine" and that physicians must bear the expense of liability coverage.

Legislative reform is only part of the answer. Physicians must act in addition to educating the public and our legislators. We must demonstrate our commitment to increased quality control effort. Increased communication with our patients can lower their expectations and help them to realize that no one can guarantee favorable outcomes, only probabilities of favorable outcomes. Patients must be told more and share more in the decision making regarding their care. As physicians, we must participate effectively in peer review to help assure the public of quality standards of care.

As physicians, we must learn more about what leads to liability claims and what we can do to reduce these factors as much as possible. Then we must build a knowledgable cadre of physicians who will work with their legislators to develop a program of tort reforms which will be of help.

It will be a big job requiring our best effort. Apathetic and/or ill informed physicians may well be part of our problem. We need the best thinking and expertise we can muster. Your IMS leadership wants to develop a strong comprehensive program to help solve these problems. We hope you will join us.

John Tyrrell, MD

John E. Tyrrell, M.D.
President

What Should Iowa Physicians Know About Releasing Medical Records?

WHAT DO Iowa physicians need to consider when a patient record is requested? This question is directed frequently to the Iowa Medical Society. The answer involves legal and ethical considerations of consequence. Various factors need to be understood by physicians when they are asked to supply information from their records.

The Iowa Medical Society Judicial Council has requested preparation that information be prepared on this subject for reference use by member physicians and others. This presentation has been prepared by legal counsel as directed by the IMS Judicial Council.

Undergirding this consideration of medical records and their release is the fact that the interest of the patient is paramount in the practice of medicine. Everything that can reasonably and lawfully be done to serve that interest must be done by all physicians who have served or are serving the patient.

RELEASE TO PATIENT

There are two separate areas of concern regarding the release of medical records. One involves access by the patient to his or her own medical records. The second has to do with the circumstances under which records may be released to a third party.

Generally, medical records are recognized as the property of the physician or the health care facility which prepared them. However, many states have recognized that the patient has a legitimate interest in the information con-

IMS REFERENCE PRESENTATION FOR IOWA PHYSICIANS — 1

Compiling and storing accurate and adequate information is crucial in the delivery of quality medical care. It all comes together as the medical record. Use of this record — and by whom — is an important matter. This information has been prepared to help physicians answer questions about the release of information from their medical records.

tained in his or her medical records. Therefore, it is suggested that physicians ordinarily release to the patient his or her records upon the presentation of appropriate written authorization.

If a physician has sound reasons for believing access to the medical records would be injurious to the patient's health or well-being, direct patient access may be denied. In such a case, it may be possible to provide the patient with a summary of the record which will meet his or her needs without causing harm. Alternatively, the physician may find it appropriate in such a situation to provide copies of the medical record (with proper authorization from the patient) to a designated representative of the patient, such as an attorney.

RECORDS OF MINORS

A request for access to or release of a minor patient's records should ordinarily be made by a parent or legal guardian. There are some circumstances, however, involving such matters as pregnancy, venereal disease or substance abuse, where a physician may be exposed to potential liability for releasing a minor's medical records to a parent or guardian. The physician should consult his or her attorney if and when such questions arise.

NATURE OF WRITTEN AUTHORIZATION

The written authorization to be obtained before releasing records to a patient should include the date such authorization is signed by the patient. It should indicate that the patient has requested the release of the records. It should show the signature of the patient, and a notation of the name of the person who actually released the records to the patient with the date of the release. Only in exceptional circumstances should the originals of the records be given to the patient. In the typical case, only photocopies should be provided.

Physicians may establish reasonable charges for the costs of copying, but a patient should not be denied copies because of inability to pay. Nor should access to the records be denied because of an unpaid bill for medical services. The records should be given to the patient within a reasonable time.

RELEASE TO OTHER PARTIES

Release of medical records to someone other

than the patient is primarily a question of maintaining the confidentiality of the physician-patient relationship. The AMA Judicial Council has stated that a patient's medical record "is a confidential document involving the physician-patient relationship and should not be communicated to a third party without the patient's prior written consent, unless required by law or to protect the welfare of the individual or the community." *Current Opinions of the Judicial Council of the American Medical Association, Section 7.02 (1984).*

ASPECTS OF CONFIDENTIALITY

Iowa law recognizes this ethical duty of confidentiality in a statute which bars physicians from giving testimony which would disclose confidential communications unless the patient waives his right to nondisclosure or unless certain other specified requirements are met. *Iowa Code, Section 622.10 (1983).* This statute, however, applies only to testimony. There is no general statutory provision governing disclosure of non-public medical records, although special provisions do exist with regard to medical records involving mental illness and substance abuse. *Iowa Code, Sections 125.37, 125.93, 229.25 (1983).* The duty to maintain the confidentiality of patient records thus is largely an ethical one, but courts in a number of states have imposed civil liability for its breach.

PROMPT CONSIDERATION OF A REQUEST

When a patient requests that his or her records be transferred to another physician, the request must be honored promptly. Again, the request should be made by the patient and should be in writing unless a medical emergency exists. If the originals of the records are transferred, the physician should retain a complete copy of the records for his or her files with a notation of the date such records were transferred and the name of the physician who received the records.

It is impossible to anticipate all of the additional circumstances under which a patient might request that his or her records be transferred to a third party. Typical situations include requests by insurance companies, employers or attorneys. In all such circumstances, absent a court order or medical emergency, the physician should obtain, prior to release of the records, a waiver signed by the patient designating the name of the party who is to receive the records. The records should not be sent to any party other than the party named in the release.

In the third party situation, as in the case of direct patient access, a patient's request for release of records should never be denied because of an unpaid bill for medical services.

EXCEPTIONS TO SIGNED RELEASE

Iowa statutory law provides three exceptions to the necessity of having the patient sign a release. The first concerns morbidity and mortality studies. Iowa law provides that any person, hospital or other organization may provide information, interview reports, statements, memoranda or other data relating to the condition and treatment of any person to the Iowa Department of Health, the Iowa Medical Society or any of its allied medical societies, the Iowa Society of Osteopathic Physicians and Surgeons or any in-hospital staff committee, to be used in the course of any study for the purpose of reducing morbidity or mortality. If records are released to these groups for the purpose of such a study, no liability of any kind for damages or other relief can arise or be enforced against any person or organization by reason of having provided such information or material. *Iowa Code, Section 135.40 (1983).*

Secondly, there is a special law concerning persons treated for mental illness. The law provides that records maintained by a hospital or other facility relating to the examination, custody, care and treatment of any mentally ill person in that facility shall be confidential, except that the chief medical officer must release information if (1) the person about whom the information is sought signs a written waiver for release of such information to a licensed attorney, physician or advocate; (2) the information is sought by court order; or (3) the patient (or his guardian, if he is a minor or legally incompetent) signs an informed con-

ABOUT MEDICAL RECORDS

The following are excerpts from the Current Opinions of the Judicial Council of the American Medical Association (1984).

7.01 RECORDS OF PHYSICIANS: AVAILABILITY OF INFORMATION TO OTHER PHYSICIANS. The interest of the patient is paramount in the practice of medicine, and everything that can reasonably and lawfully be done to serve that interest must be done by all physicians who have served or are serving the patient. A physician who formerly treated a patient should not refuse for any reason to make his records of that patient promptly available on request to another physician presently treating the patient. Proper authorization for the use of records must be granted by the patient. Medical reports should not be withheld because of an unpaid bill for medical services. (IV)

7.02 RECORDS OF PHYSICIANS: INFORMATION AND PATIENTS. Notes made in treating a patient are primarily for the physician's own use and constitute his personal property. However, on request of the patient a physician should provide a copy or a summary of the record to the patient or to another physician, an attorney, or other person designated by the patient.

Several states have enacted statutes that authorize patient access to medical records. These statutes vary in scope and mechanism for permitting patients to review or copy medical records. Access to mental health records, particularly, may be limited by statute or regulation. A physician should become familiar with the applicable laws, rules or regulations on patient access to medical records.

The record is a confidential document involving the physician-patient relationship and should not be communicated to a third party without the patient's prior written consent, unless required by law or to protect the welfare of the individual or the community. Medical reports should not be withheld because of an unpaid bill for medical services. Simplified, routine insurance reimbursement forms should be prepared without charge, but a charge for complex, complicated or multiple reports may be made in conformity with local custom.

sent to release information. In the latter case, the consent must designate specifically the person or agency to whom the information is to be sent, and the information may be sent only to that person or agency. Also, the chief medical officer may release information for the purpose of research into the causes, incidence, nature and treatment of mental illness. However, in this case the information may not disclose the patients' names or identities in any manner. Finally, the chief medical officer may release appropriate information during a consultation with the spouse of a mentally ill patient if requested by the spouse and if the chief medical officer deems it to be in the best interest of the patient and the spouse to do so. *Iowa Code, Section 229.25 (1983).*

Thirdly, there is also a special law pertaining to persons who have received care or treatment for substance abuse at a hospital or other facility. Although the registration and other records of such facilities are generally confidential and are privileged to the patient, the director of such a facility may disclose a patient's records to medical personnel in a medical emergency with or without the patient's consent. In addition, if done in a way that does not disclose patients' names or other identifying information, the director may make available information from patients' records for the purpose of research into the causes and treatment of substance abuse. *Iowa Code, Section 125.37 (1983).*

OPINIONS FROM AMA JUDICIAL COUNCIL

Opinions on the subject of medical records have been issued by the Judicial Council of the American Medical Association. They are important and deserve to be understood by Iowa physicians.

Reprinted with this discussion are two passages from the Current Opinions of the AMA Judicial Council (1984).

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Donald L. Kahle, M.D.

QUESTIONS AND ANSWERS



'85 SCIENTIFIC SESSION

Dr. Kahle chairs the 1985 IMS Scientific Program Committee. His comments here constitute a cordial invitation to all IMS members to attend the April 19-21 Scientific Session.

Please give a brief rundown of the 1985 Scientific Session.

This year's session will be held in conjunction with the House of Delegates meeting at the Hotel Savery in Des Moines. The Scientific Session is scheduled Friday, April 19, through Sunday morning, April 21. The Program Committee has concentrated on "Wellness" for the session's main theme, but has also included medico-legal and socioeconomic issues.

As this year's program combines the Scientific Session with the House of Delegates, it should prove to be advantageous to physicians, right?

Most certainly. This arrangement provides for the most efficient use of time, an increasingly scarce commodity for all of us. Hopefully, this combined-event weekend will further encourage physician attendance.

Why should Iowa physicians attend this CME event?

Frankly, we have tried to put together a "blockbuster" for you this year, complete with some prominent names and topics of interest for everyone.

What programs or speakers might be of special interest to attending physicians?

The sessions with former Governor and Senator Harold Hughes, Olympic and Iowa Hawkeye Coach Dan Gable and AMA President Joe Boyle, M.D., promise a wide diversity of both entertaining and informative viewpoints. In addition, the risk management program Saturday afternoon will be especially timely, in view of the recent initiation of the new IMS-sponsored medical liability insurance program.

Are there other points about the 1985 Scientific Session you would like to emphasize?

Friday's presentations will concentrate on the "Wellness" theme. To continue a popular program, family practice residents will again be on hand to discuss some of their best cases.

What special words of invitation might you give to Iowa physicians?

I feel this is an exciting program that can't miss. We of the Program Committee have had a great time putting the Scientific Session together. We hope all IMS members will come and share the weekend with us.

Physicians may earn Category I continuing medical education (CME) credit at the IMS Scientific Session, correct?

The 1985 Scientific Session of the Iowa Medical Society is co-sponsored by the University of Iowa College of Medicine. It has been approved for 10½ hours in Category I of the AMA Physician's Recognition Award. In addition, the program has been approved for 9½ hours of prescribed credit by the American Academy of Family Physicians.

Alternate Delivery Systems Are Expanding In Iowa

Iowa alternate delivery systems are growing steadily. There are close to 150,000 persons now receiving care from one of these newer delivery mechanisms. IOWA MEDICINE ***has compiled this summary from information submitted by the various Iowa ADS programs; the numbers reported are as of December 1984.***

ALMOST 150,000 persons were enrolled in Iowa's 7 alternate delivery systems as of December 1, 1984. This number of ADS enrollees has moved from zero in 1980 to a population level approximately equal to Linn County. And indications are the number of enrollees will increase substantially over the next 5 years.

What has caused this significant growth in alternate delivery mechanisms in Iowa? A main impetus has come from business and industry in the belief that health care costs can be constrained. Proponents of these newer modes say care will remain at an acceptable quality level with a positive economic outcome.

So the Iowa health care landscape is now dotted with health maintenance organizations, independent practice associations, preferred provider organizations, each with some variations on the theme.

To provide an overview of ADS developments in the state, IOWA MEDICINE surveyed those programs operating as of December 1984. A questionnaire requested information on the number of enrollees; when the program began; service area; how physician and inpatient services are provided; cost to the subscriber/employer; employers offering the plan as an option; whether Medicare/Medicaid coverage is provided; the program's federal qualification status; and any additional information the particular ADS wished to provide.

CEDAR VALLEY HEALTH PLAN (CVHP)

Date of program inception: August 1, 1982.

Number of enrollees as of December 1, 1984: 31,100.

Service area: Black Hawk, Buchanan, Butler, Bremer, Chickasaw, Fayette, Franklin, Grundy and Tama counties. CVHP's headquarters are in Waterloo.

Manner of providing physician services: IPA-model HMO. Physicians contract with CVHP to provide services to enrollees. IPA physicians work in their own offices serving CVHP enrollees and their own patients.

Manner of providing inpatient services: CVHP contracts with 4 hospitals: Sartori in Cedar Falls and Allen, Schoitz and St. Francis in Waterloo. Six rural hospitals are paid on a per charge basis.

Monthly cost to subscriber/employer: Employer experience-rated premiums are approximately $60 per single and $200 per family.

Major employers offering program as an option: John Deere, City of Waterloo and CVHP employees.

Physician reimbursement for services: Fee-for-service. Physicians are paid 90% of the fee; 10% is held in a contingency reserve, also called a risk pool. If CVHP has a surplus for the provision of specialty and hospital care at year-end, the withhold is returned entirely to the physician. If CVHP has a deficit, participating physicians share in a portion of the loss, up to the amount withheld in the contingency reserve.

ALTERNATE DELIVERY SYSTEMS IN IOWA

Seven Systems	Date of Inception	Number of Enrollees — 12/1/84
1 (CVHP)	1982	31,100
2 (MMA)	1984	19,200
3 (QCHP)	1980	61,435
4 (THN)	1984	43
5 (MACHP)	1982	14,871
6 (IPPO)	1984	11,000
7 (SHARE)	1983	11,000

Medicare/Medicaid coverage provided: Yes.

Federal qualification status: Under consideration, not qualified currently.

Additional information: Physicians have their fees and patient hospitalizations reviewed and fees must be guaranteed for a year. In addition, participating physicians underwrite a portion of the program and agree to a peer review process on services rendered to CVHP enrollees.

MID-IOWA MEDICAL ASSOCIATES (MMA)

Date of program inception: January 1, 1984.

Number of enrollees as of December 1, 1984: 19,200.

Service area: Des Moines, where MMA is based.

Manner of providing physician services: This PPO, like most, contracts on a fee-for-service basis with employers, insurance carriers or third party administrators to provide medical services to enrollees.

Manner of providing inpatient services: MMA contracts with Iowa Methodist Medical Center in Des Moines.

Monthly cost to subscriber/employer: MMA works with self-funded employers. Premiums are determined by experience and desired coverage. There is no additional cost for offering the PPO.

Major employers offering program as an option: Iowa Methodist Medical Center, Bankers Life Insurance Company, Interstate Assurance Company and the City of Des Moines.

Physician reimbursement for services: Fee-for-Service. Maximum amounts payable have been established for over 7,000 procedures. Employers negotiate with MMA for the amount they pay.

Medicare/Medicaid coverage provided: No.

Federal qualification status: Not qualified.

Additional information: MMA offers these benefits: employers receive reduced rates for physician and hospital services; guaranteed rates on physician services for 1 year; the opportunity to expand coverage; pre-admission screening and comprehensive utilization review. Employees benefit from increased coverage without increased cost; lower out-of-pocket expense; more freedom in selecting a physician than offered by an HMO; most physician offices file claim forms. Physicians receive fast reimbursement, from 7 to 10 days, and more patients.

QUAD-CITY HEALTH PLAN (QCHP)

Date of program inception: May 1980.

Number of enrollees as of December 1, 1984: 61,435.

Service area: Rock Island and Henry counties in Illinois, Scott county in Iowa and the Iowa communities of Ottumwa, Muscatine, Clinton, Maquoketa and Iowa City. QCHP is headquartered in Davenport.

Manner of providing physician services: IPA-model HMO.

Manner of providing inpatient services: QCHP contracts with all the hospitals in its service area.

Monthly cost to subscriber/employer: Varies, relating to each employer experience.

Major employers offering program as an option: John Deere, ALCOA, American Honda, Quad-Cities Pathologists Group, Industrial Engineering Equipment Co., Long Manufacturing N.C., Inc., Caterpillar, Lutheran Hospital, Mercy Hospital, Augustana College, Franciscan Medical Center, North Star Steel, International Harvester, Clifton Precision, Parr Instrument, Lucky Stores, Inc., Mills Chevrolet and Rock Island Arsenal.

Physician reimbursement for services: Fee-for-service based on an approved fee schedule. Physicians are paid 90% of the fee with 10% held in a contingency reserve.

Medicare/Medicaid coverage provided: Medicare covered.

(Please turn to page 108)

Immanuel Medical Center



Announcing . . .

ONCOLOGY FELLOWSHIP PROGRAM — APRIL 11-12, 1985

A two-day continuing education program in Oncology for primary care physicians will be held at Holling Education Center, Immanuel Medical Center, April 11-12, 1985. This program is designed to enhance physicians' diagnosis, treatment and follow-up skills in dealing with the most prevalent oncology diagnosis. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of elegant "dining out" together on Thursday, April 11. Participants are housed at the beautiful new Immanuel Plaza Motel on the Medical Center campus.

An agenda for the two-day program is as follows:

First Day

Introduction to Cancer
John B. Davis, M.D.
Principles and Treatment of Cancer: Radiation Oncology
Chemotherapy
David J. Harter, M.D.
Herbert A. Hartman, Jr., M.D.
Imaging Modalities
Paul Bender, M.D.*
W. Benton Copple, M.D.*
Primary Oncologic Emergencies
John J. Hoesing, M.D.
Colon Cancer Update
Mark Christensen, M.D.
Tumor Markers
Thomas A. Ruma, M.D.
The Black Spot — Malignant Melanoma
John F. Latenser, M.D.
Lung Cancer Update
Leonard Moss, M.D.
David A. Hughes, M.D.
The Role of the Family Physician in the Treatment of Cancer
Ronald C. Bell, M.D.
Tour of Radiation Oncology

Second Day

Tumor Conference
John B. Davis, M.D., Moderator
Panel — Medical Staff representing Hematology, Medical Oncology, Pathology, Gynecology, Surgery, Radiology, Urology, General Family Practice, Internal Medicine
Gynecologic Tumor
Leon S. McGoogan, M.D.*
Terrence J. Kolbeck, M.D.*
Chronic Lymphatic Leukemia
John R. Feagler, M.D.*
Joseph D. Verdirame, M.D.*
Multiple Myeloma
John R. Feagler, M.D.*
Joseph D. Verdirame, M.D.*
Control of Pain in the Cancer Patient
David J. Harter, M.D.
Skin Tumor, Diagnosis and Treatment
John F. Latenser, M.D.
Breast Cancer Update
John B. Davis, M.D.
Cancer Screening in the Physician's Office
William A. Shiffermiller, M.D.
Prostatic Carcinoma
Stewart E. Sloan, M.D.*
Gerald C. Felt, M.D.*
Liver Pumps and Hickman Catheters
Thomas Connors, M.D.
Follow-Up of Cancer Patients
John B. Davis, M.D.

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402) 572-2340.

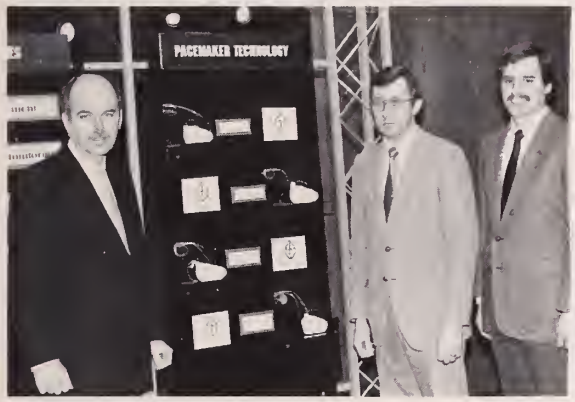
* Session presenter rotates for each Fellowship Program.

MEDICAL FELLOWSHIP PROGRAMS











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The Cardiology Fellowship, to be held at the Holling Center on April 18-19, 1985, is a two day intensive program for primary care physicians. The program is designed to enhance diagnostic, treatment and follow-up skills in caring for the cardiac patient. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of elegant "dining out" together on Thursday, April 18. Participants are housed at the beautiful new Immanuel Plaza Motel on the Medical Center campus.

First Day

Differential Diagnosis of Chest Pain
Richard E. Collins, M.D.
Electrocardiography
Richard E. Collins, M.D.
Treadmill Testing
Steven J. Diamantis, M.D.
Current Therapy for Angina Pectoris
Michael M. Dehning, M.D.
Percutaneous Transluminal Coronary Angioplasty
Richard E. Collins, M.D.
Cholesterol and Coronary Artery Disease
Joseph M. Rapoport, M.D.
Nutrition and the Heart Patient
Sue Fargher, R.D.
Coronary Bypass Surgery
David A. Hughes, M.D.
Current Methods of Myocardial Infarction Reduction
Steven J. Diamantis, M.D.
After Infarct — What Next?
Michael M. Dehning, M.D.
Case Studies
Richard E. Collins, M.D.
Michael M. Dehning, M.D.

Second Day

Bedside Exam of Cardiac Patient
Richard E. Collins, M.D.
Valvular Heart Disease
Richard E. Collins, M.D.
Echocardiography
Michael M. Dehning, M.D.
Current Therapy of Congestive Heart Failure
Steven J. Diamantis, M.D.
Pre-op Evaluation of the Cardiac Patient
Michael M. Dehning, M.D.
Stress Management
Richard E. Collins, M.D.
Approach to Sudden Death
Steven J. Diamantis, M.D.
Pacemakers
Michael M. Dehning, M.D.
Current Therapy for Hypertension
Richard E. Collins, M.D.
Future Trends
Richard E. Collins, M.D.

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402) 572-2340.

Federal qualification status: Not qualified.

Additional information: The QCHP has solo practice physicians as well as those from large multi-specialty groups. Patients have a free choice of participating physicians. QCHP has doubled enrollees in the past year. Approximately 600 Iowa and Illinois physicians participate in the plan.

TOTAL HEALTH NETWORK OF IOWA (THN)

Date of program inception: December 1, 1984, in Dubuque; February 1, 1985, in Des Moines.

Number of enrollees as of December 1, 1984: 43 in Dubuque. New in Des Moines.

Service area: THN plans to market in the 73 counties served by Blue Cross/Blue Shield with the base office in Des Moines. The Des Moines service area includes Polk and Warren counties with adjacent counties to be added. The Dubuque service area includes all of Dubuque, Clayton, Delaware and Jackson counties and portions of Jones, Cedar and Clinton counties.

Manner of providing physician services: Direct contract IPA model with both primary care and referral physicians participating.

Manner of providing inpatient services: THN contracts with hospitals in its service areas. All admissions must be certified. Non-emergency admissions must be pre-certified. Concurrent review of all inpatient stays is conducted according to severity of illness/intensity of service.

Monthly cost to subscriber/employer: As of October 1, 1984, Dubuque service area rates were $66.20 for singles and $175.70 for families. These rates will be adjusted depending on the employer group's age/sex mix.

Major employers offering program as an option: Dubuque service area employer groups are Loras College, Mercy Medical Center, Regency Thermography, Hillcrest Family Association and Dubuque Visiting Nurses Association.

Physician reimbursement for services: Primary care physicians are prepaid a capitation sum. This capitation allocation is adjusted based on the age and sex of the THN patients. Referral physicians are paid on a fee-for-service basis limited to the THN fee schedule. A percentage of each physician allocation and/or fee-for-service is withheld in a contingency reserve.

Medicare/Medicaid coverage provided: Medicare supplemental coverage is available in the Dubuque service area. THN intends to contract with the Health Care Financing Administration to provide Medicare coverage in Dubuque and Des Moines by 1986.

Federal qualification status: Qualification planned in 1985.

Additional information: THN is an affiliate of Blue Cross/Blue Shield of Iowa. It is organized as an HMO. THN stresses preventive health care, health education and use of outpatient care whenever medically appropriate. Physicians eligible to be primary care participants are general and family practitioners, internists, pediatricians, obstetricians and gynecologists. THN primary services include: office visits, hospital admissions and visits, injections and immunizations, well-child care, periodic health examinations, emergency physician services within the service area, home visits, specimen collection fees for laboratory services and miscellaneous office services and supplies. A primary care physician must refer the THN enrollee; unauthorized visits are not covered by THN.

MEDICAL ASSOCIATES CLINIC HEALTH PLAN, INC. (MACHP)

Date of program inception: July 1982.

Number of enrollees as of December 1, 1984: 14,871.

Service area: Clayton, Clinton, Delaware, Dubuque, Jackson and Jones counties in Iowa and Grant and Lafayette counties in Wisconsin. MACHP serves Jo Daviess county in Illinois. The HMO is based in Dubuque.

Manner of providing physician services: Group practice HMO, with contracting physicians in neighboring communities.

Manner of providing inpatient services: MACHP uses all hospitals in its service area. Local hospitals bill MACHP for services to enrollees and MACHP pay charges.

Monthly cost to subscriber/employer: Premiums are determined on a modified community basis by the employer group. There are no standard rates.

Major employers offering program as an option: John Deere, Mercy Health Center, Dubuque Community Schools, City of Dubuque, Coun-

ty of Dubuque and Medical Associates Clinic, P.C.

Physician reimbursement for services: Fee-for-service basis less a portion in a contingency reserve.

Medicare/Medicaid coverage provided: Over 3,000 Medicare patients are enrolled in the plan.

Federal qualification status: Qualified December 12, 1983.

Additional information: MACHP is licensed in Iowa and Wisconsin. This plan was Iowa's first federally qualified HMO. It is governed by a 13-member board on which business, labor and physician leaders serve. Over 100 physicians participate in MACHP; 66 physicians are located in Dubuque at Medical Associates Clinic, P.C.

IOWA PREFERRED PROVIDER ORGANIZATION (IPPO)

Date of program inception: June 1, 1984.

Number of enrollees as of December 1, 1984: 11,000.

Service area: Greater Des Moines. IPPO is headquartered in Des Moines.

Manner of providing physician services: Physician panel with approximately 200 members.

Manner of providing inpatient services: Members are admitted to a hospital of their choice. IPPO contracts with hospitals providing economic incentives for patient and employer.

Monthly cost to subscriber/employer: IPPO works with self-funded employers and charges them $1 per employee enrolled. IPPO does offer separate contracts to employers wanting different arrangements.

Major employers offering program as an option: Agri Industries, Mercy Hospital Medical Center, Kirke-Van Orsdel Companies and Ryco Manufacturing.

Physician reimbursement for services: Discounted fee-for-service.

Medicare/Medicaid coverage provided: No.

Federal qualification status: No.

Additional information: IPPO is available to any employer, regardless of insurance carrier or employee group size. Maintains patient/physician relationship; allows freedom of choice of participating physicians; employer retains existing insurance coverage; enhances the benefit program provided by an employer.

SHARE HEALTH PLAN OF IOWA (SHARE)

Date of program inception: July 1983.

Number of enrollees as of December 1, 1984: Approximately 11,000.

Service area: Polk and Warren counties; Des Moines is the base of operation.

Manner of providing physician services: Primary care network, also called closed panel HMO; SHARE contracts with individual primary care physicians who practice in their own offices. SHARE also contracts with a panel of referral physicians to whom the primary care physicians can refer patients.

Manner of providing inpatient services: SHARE contracts with hospitals in its service area.

Monthly cost to subscriber/employer: $60-$80 for singles and $160-$220 for family.

Major employers offering program as an option: Federal government, State of Iowa, Polk County, City of Des Moines, Meredith Corporation, Pioneer Hi-Bred International, Des Moines Register, Norwest Bank, Massey Ferguson, Bankers Life, Equitable of Iowa, Des Moines Public Schools, West Des Moines Public Schools and Northwestern Bell.

Physicin reimbursement for services: Capitation and fee-for-service.

Medicare/Medicaid coverage provided: No.

Federal qualification status: Qualified.

Additional information: SHARE is part of the SHARE Development Corporation, which is a national HMO management development firm formed in 1982. The corporation owns and/or operates HMOs in Minnesota, Illinois, Iowa and Nebraska. SHARE has contracts with non-physician providers such as pharmacies, home health care agencies, counseling centers and durable medical supply organizations. Forty-five primary care physicians participate. SHARE emphasizes preventive medicine; participation includes hospitalization, surgery, office visits, physicals, eye examinations, immunizations and allergy testing and treatment.

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Dementia

STANLEY M. HAUGLAND, M.D.,
GLENYS O. WILLIAMS, M.D.,
IAN M. SMITH, M.D., and
JAMES R. GILSON, M.D.

From 1980 to 2050, those in the U.S. over 65 will double in numbers. An increased elderly population means an increased number of dementia sufferers. For this reason there is a growing interest in elderly disorders, particularly dementia. This overview is the second in a series by the IMS Subcommittee on Aging and Chronic Illness.

Dementia is "an impairment of intellectual function, usually accompanied by memory loss and personality change. It is a broad term used to describe a condition wherein a person exhibits specific disabilities of problem solving, memory, orientation and appropriateness of behavior in relationship to the environment."[1]

There is rapidly growing interest in dementia (previously called organic brain syndrome) for 3 main reasons.

The authors are members of the Iowa Medical Society Subcommittee on Aging and Chronic Illness. Dr. Haugland is Medical Director of the Younker Gerontology Project, Iowa Methodist Medical Center, Des Moines, Iowa. Dr. Williams is Associate Professor of Family Practice, The University of Iowa College of Medicine, Iowa City, Iowa. Dr. Smith is Professor of Internal Medicine, The University of Iowa Hospitals and Clinics, Iowa City, Iowa. Dr. Gilson is in the private practice of internal medicine (cardiology) in Davenport, Iowa.

1. Neuropathologic studies over the past 15 years have disclosed, contrary to prevailing medical opinion, that dementia as a rule is not caused by cerebral atherosclerosis.
2. Approximately 25% of dementias are treatable or reversible and misdiagnosis is extremely tragic.
3. It is becoming an increasingly costly health problem as our population ages, for example:

- *In 1980, those 65 years plus equaled 11% of population in the U.S.*
- *In 2020, those 65 years plus will equal 18%.*
- *In 2050, those 65 years plus will equal 22%.*
- *Of those 65 years plus, 5% have dementia severe enough to require institutionalization, but an additional 10% have a milder form and can still be managed at home.*
- *Today over one-half of nursing home patients have senile dementia thus making it one of our most costly diseases.*
- *Today it is the fourth leading cause of death (120,000 annually).*
- *By 2050 it will be the leading cause of death and our most expensive illness, unless a cause with a remedy is found.*[2]

There may be as many as 50 different causes of dementia,[3] with Alzheimer's disease accounting for approximately 50%, multi-infarct dementia approximately 15%, a combination of Alzheimer's and multi-infarct dementia an additional 10%, and the remaining 25% are thought to have dementia that is potentially reversible. Of the reversible dementias, pseudodementia (depression) and drug use are thought to make up the largest segment. Great care and skill need to be exercised in

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF MARCH 1985

TABLE I

SOME REVERSIBLE CAUSES OF DEMENTIA IN ORDER OF DECREASING FREQUENCY

1. Medicatian problems
2. Depression
3. Metabalic disarders (hypakalemia, hypa- and hypernatremia, valume depletian, hypaglycemia, hypa- and hyperthyraidism, hypercalcemia)
4. Infectian (viral ar bacterial) ar fever
5. Cardiavascular diseases (CHF, arrhythmia, vascular acclusian)
6. Brain disarders (strake, subdural hematama, chranic infectian, brain abscess, cerebral malignancy, narmal pressure hydrocephalus)
7. Pain (fecal impactian)
8. Sensary deprivatian (blindness, deafness, aphasia)
9. Haspitalizatian (anesthesia, surgery, enviranmental change, isalatian)
10. Alcahal (alcahalism, recent ar chranic)
11. Anemia
12. Tumar
13. Chranic lung disease (hypaxia, hypercapnia)
14. Nutrient deficiencies (B_{12}, falic acid, niacin)
15. Chemical intaxicatians (heavy metals, carban manaxide)

evaluating dementia to avoid the extremely disastrous consequences of diagnosing reversible dementia as non-reversible and labeling someone inappropriately.

Senile dementia of the Alzheimer's type (SDAT) is an assumed diagnosis determined by ruling out the reversible causes of dementia. The clinical course is one of progressive loss of memory and other intellectual functions, personality and behavioral changes, and of course, with time, complete deterioration. A brain biopsy or autopsy is necessary to make this diagnosis which demonstrates the neurofibrillary tangles and plaques that Dr. Alzheimer described. Current research suggests that there may be multiple causes and studies in progress focus on virus infections, aluminum, cholinergic deficiencies, and genetic factors.[4]

Multi-infarct dementia (MID) is different from SDAT as its onset is more abrupt and its course is episodic. The deterioration is often stepwise due to repeated infarctions. Patients are likely to have a history of contributing factors such as hypertension, cardiovascular disease, diabetes mellitus, obesity, and smoking. Many may also exhibit neurologic deficits.

Reversible dementia must be carefully ruled out (Table I), remembering that the largest group in this segment suffers from depression (pseudodementia) which is frequently overlooked. Table II differentiates between depression and true dementia.

The burden is on the clinician to rule out reversible dementia. To do so one must first gather a history from the patient and family. Table III is a list of some of the factors to consider during the patient assessment.

PHYSICAL EXAM

During the physical examination, special attention should be given to the patient's mental status, searching for signs and symptoms of depression and testing immediate, recent, and remote memory; the ability to calculate; orientation; abstraction; and the ability to perform such tasks as writing and drawing a clock face with the hands set at 3:30. In questionable cases of mental status a neuropsychological evaluation is important with repeat evaluations in 6 months if there is any doubt. In view of the drastic consequences of a misdiagnosis, a second opinion by a neurologist or neuropsychiatrist is highly desirable. Sometimes a

TABLE II

DEPRESSION VERSUS TRUE DEMENTIA[5]

	Depressian	*Dementia*
Onset	Rapid; exact anset can aften be dated	Insidiaus and ill-defined
Behaviar	Stable; depressian, apathy, and withdrawal camman	Labile; fluctuates between narmal, withdrawn, and apathetic
Mental impaired, competence cagnitive	Usually unaffected; hawever may appear demented at times, camplains af memary prablems	Cansistently tries ta hide impairment
Samatic	Vegetative signs camman; anxiety, insamnia, eating disturbances, minar physical camplaints	Occasianal sleep disturbances
Self-image	Paor	Normal
Duratian	Usually self-limited; reversible with therapy	Chranic; slow pragressive

TABLE III

IMPORTANT COMPONENTS OF HISTORY OF DEMENTED PATIENTS

- Potient history
  - Durotion af signs ond symptoms
  - Pattern af progression of illness (sudden or insidious onset, steady or stepwise deteriaration)
  - Other medical or neurologic problems
  - History of psychiotric illness
  - Medicotian (R_x ond OTC) usage
- Fomily history*
  - Sociol history
    - Alcohol intoke
    - Ability to perform octivities af doily living, e.g., feeding, toileting, grooming, dressing, communicoting
    - Stress an coregivers
    - Behavior hormful to potient or others, e.g., falls, wondering, medicotion misuse

* It is important to note thot first degree relotives of patients with Alzheimer's diseose ore 5 times more likely to develop the disease thon those with no fomily history.

therapeutic trial with antidepressant drugs must be used to assist in the differential diagnosis.

A comprehensive work-up should include a CBC, urinalysis, SMA-18, thyroid profile, B_{12} and folate levels, EEG, and CT scan. The EEG may be useful in following Alzheimer's disease, as 80% of patients show a slowing of basic frequencies from a normal 10 per second rhythm to 5-7 seconds or less. The CT scan is valuable to rule out tumors, identify infarcts, and screen for normal pressure hydrocephalus, but the presence of cerebral atrophy does not prove the diagnosis of Alzheimer's disease.

PATIENT MANAGEMENT AND SUPPORT

Most patients with dementia are cared for in their own homes, which places a great deal of stress on the caregivers. Table IV is a list of resources that are available to the patient's family. Special attention should be given to respite care for the caregiver as provided by some nursing homes or agencies providing homemaker/adult-sitting services. It is also wise to advise the caregiver to seek legal counsel in the event that a conservator or guardian needs to be appointed.

It is important to make the home as safe as possible; for example, slippery walking surfaces should be avoided and items that may be tripped over should be removed. Doors can be fixed to minimize wandering outside in inclement weather. Finally, for families or the support system, there comes a time when they can no longer meet the needs of the demented person and institutional care is indicated. Families tolerate incontinence remarkably well, but repeated sleep disturbances or lack of

(Please turn to page 114)

TABLE IV

ALZHEIMER'S DISEASE AND RELATED DISORDERS ASSOCIATION SUPPORT GROUP DIRECTORY

Following is o list of nomes ond phone numbers thot moy be helpful to you. Contoct these people for informotionol moterial on Alzheimer's or for names af speokers who will tolk to your group. They ore olso there for caring, shoring, or just to listen!

NATIONAL ADRDA HEADQUARTERS —360 N. Michigan Avenue
Chicogo, Illinois 60601
312/853-3060
For informotion requests:
800/621-0379 (toll free)

Area	*Contact Person*	*Phone*
Algona	Gail Nugent	515/295-7920
Burlingtan	Mary Wiedmonn	319/753-6892
	Phil Anholt	319/752-0137
	Lola Ahlberg	319/753-1500
Cedar Rapids	Jayce Bowdish	319/398-3555
Cherokee	Morilyn Cope	712/434-5515
	Koren Mognussen	712/437-2472 after 5 p.m.
Des Moines	Vel Melcher	515/283-6431
Dubuque	Sister Helen Schneider	319/557-7180
Fort Dodge	Dione Rollins	515/573-2121
	JoAnn Lorson	515/545-4595
Ido Grove	Jayne Horter	712/364-3327
Indionola	Sherry Sheldon	515/961-2555
	Nancy Miller	515/961-2555
lowo City	Geri Holl	319/356-4420
Josper County	Edith Reynolds	515/792-6494
Lee County	Bonny Sommons	319/524-6808
Moson City	Elaine Easley	515/423-5370
	Georgio Kringlock	515/424-3607
	Morgoret Snyder	515/423-3910
	Betty Erickson	515/357-8533
Muscotine	Arlene Becker	319/263-2194 or 319/263-8697
Ottumwo	Kothy Shepord	515/684-4651
Quad Cities	Jo Lindquist	319/322-7233 ar 319/391-7308
	Sister Corolyn Wolters	319/323-5525
Sioux City	Rosemory Deming	712/276-8070
	Lois Stiles	712/276-6028
Story County	Roolo Giles	515/382-6405
	Dorothy Kyllo	515/232-5409
Waterloo	Jeonnie Mullen	319/291-3400
	Bernice Borney	319/234-7616
	Roxone Burnell	319/233-9404
Waverly	Sue Vollem	319/352-4540

relief from the burden of care may precipitate a decision to place the patient in a nursing home.

SDAT drug therapy is essentially symptomatic. In the early stages of any dementing disease, antidepressants may be helpful in relieving the associated depression. Major tranquilizers such as Mellaril and Navane have been helpful at times in very small doses to improve orientation as well as to ameliorate aberrant behavior. Drug benefit versus side effects must be carefully weighed in these drugs as well as others that one may try. Behavioral therapy with specially trained nurses in a low stimulus environment can effectively reduce the need for mood-altering drugs. As research provides a clearer understanding of the nature of Alzheimer's disease, undoubtedly more specific therapy will evolve and eventually prevention may become a reality. In the case of MID, the causes are more clearly understood and the best course of action is prevention.

It is well to recall Dr. Peabody's closing statement to the American Medical Association in 1927, ". . . the best patient care is caring for the patient."

RECOMMENDED READING FOR PHYSICIANS AND PATIENTS' FAMILIES

The 36-Hour Day. A family guide to caring for persons with Alzheimer's disease, related dementing illnesses, and memory loss in later life. Mace NL and Rabins PV. The Johns Hopkins University Press, Baltimore 1981.

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4. Thal, LJ: Current concepts of dementia. Geriatr. Med. Today, 1984, 3(No. 1):86.
5. The Geriatric Medicine Newsletter, Medical College of Wisconsin, April 1983, Vol. 1:No. 1.

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Tuberculosis of the Cecum: A Continuing Problem

PAUL E. JOHNSON, M.D.,
JAMES M. CATERINE, M.D., F.A.C.S., and
KYUNG-WHAN MIN, M.D.,
Des Moines, Iowa

While ileo-cecal tuberculosis is relatively rare, it can occur sporadically. It is more likely to appear among immigrants from under-developed countries. This case report will help physicians continue and increase their awareness.

SPORADIC cases of tuberculosis of the gastrointestinal tract continue to be reported in the United States despite a general impression the problem is historical. Failure to include primary tuberculosis in the differential diagnosis of certain gastrointestinal tract diseases is unfortunate. This is especially true of patients who are immigrants from Latin America and Asia where tuberculosis is endemic. Colonoscopy makes preoperative diagnosis possible and may preclude unnecessary or excessive surgery.

CASE REPORT

An 80-year old, well developed, well nourished woman of Mexican descent was admitted for evaluation of lower abdominal pain of several months duration. Her admission physical findings were normal except for slight tenderness in the right lower abdomen. Laboratory data was as follows: WBC 8,900 (81 segs, 15 lymphs, 1 mono, 3 eos); hemoglobin 11.6; hematocrit 34.4; normal PTT, alkaline phosphatase 110 with the remainder of the liver function tests being normal; serum electrolytes and SMA-12 were normal except for the alkaline phosphatase. Colonic mucosal antibodies were detected.



Figure 1 — Barium enema of cecal area showing filling defect (arrow) base of cecum near the appendix.

The authors are associated with Mercy Hospital Medical Center. Dr. Johnson is a surgical resident at Mercy and Veterans Administration Hospital, Des Moines. Dr. Caterine is a consultant, surgical service, VA Hospital. Dr. Min is associated with the Pathology Department at Mercy.

Chest X-ray showed only mild emphysema with no granulomatous changes. A barium enema revealed a filling defect in the colon suspicious of neoplasm (Figure 1). Liver scan was questionable for metastatic tumor. X-rays of the kidneys, stomach, gallbladder, and small bowel were normal. Abdominal ultrasound was also normal. Sigmoidoscopic examination revealed no abnormalities.

Exploratory laparotomy was done; no abnormalities were found except an indurated lesion of the cecum. This was totally excised. Postoperatively, the patient did well and symptoms resolved.

Microscopic examination showed granulomatous inflammation involving the cecum, terminal ileum and pericolic lymph nodes. Acid fast bacilli were noted also. Cultures of colonic tissue were positive for myobacterium tuberculosis. A postoperative PPD test was positive.

COMMENT

The incidence of extrapulmonary tuberculosis has remained constant over the past several decades in the United States (approximately 5,000 cases per year). The incidence of gastrointestinal tuberculosis is decreasing. It represented 4% of extrapulmonary tuberculosis in 1981.[1]

Gastrointestinal tuberculosis is most common in the ileo-cecal area. The most common symptom is abdominal pain. Other symptoms and findings include fever, abdominal mass, nausea, vomiting, diarrhea, malaise, weight loss, malabsorption and ascites. The tuberculosis skin test is usually but not always positive. This can cause some difficulty in the differential diagnosis. Coexistent evidence of pulmonary tuberculosis is generally low, found only in approximately 30-50% of patients.[2, 3] There was no indication of pulmonary involvement in the present case. Barium enema X-ray and colonoscopy are the mainstays of diagnosis. Other imaging examinations such as CT scans and angiography are generally non-specific, although angiography has been reported occasionally to differentiate from Crohn's disease.[4] Stool cultures are rarely helpful.

In this patient tuberculosis of the intestine was not considered strongly and because the barium enema and liver scan were suspicious for carcinoma, a hemicolectomy was performed. Had preoperative colonoscopy found a mucosal pattern and had biopsy findings been consistent with tuberculosis, a trial of chemotherapy could have been administered. It has been shown to be effective in treatment of gastrointestinal tuberculosis.[5] Only those who continue to have symptoms such as chronic pain, obstruction, perforation, rectal bleeding, or peritonitis require surgery. The procedure of choice is simple resection of the lesion.

Ileo-cecal tuberculosis, though rare, will continue to occur sporadically, especially in immigrants from under-developed nations. A continued awareness of it by physicians can save the patient unnecessary and extensive surgery.

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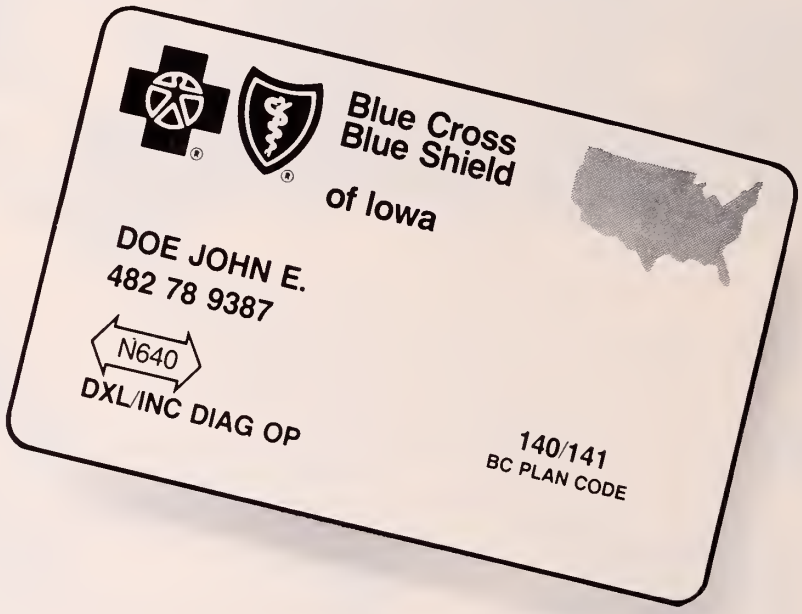
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IMS Scientific Session
April 19 - 21, 1985
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SCIENTIFIC SESSION

The 1985 Scientific Session of the Iowa Medical Society will be held in conjunction with the annual meeting of the IMS House of Delegates, April 19-21, at the Hotel Savery in Des Moines. A full day of scientific programming is scheduled Friday, April 19, beginning at 9 a.m. In addition, a 2-hour risk management seminar will begin at 3 p.m. on Saturday, April 20. The 1985 Scientific Session will continue Sunday, April 21, with a 7 a.m. breakfast program featuring AMA President Joseph Boyle, M.D. It will conclude just prior to the final session of the IMS House of Delegates.

THE PROGRAM COMMITTEE

Donald L. Kahle, M.D., Dubuque, is chairman of the 1985 IMS Program Committee. Other members are Mary Ann Arends, M.D., Manchester; Richard M. Caplan, M.D., Iowa City; Richard K. Green, M.D., Council Bluffs; John W. Olds, M.D., Des Moines; and Homer L. Skinner, Jr., M.D., Carroll.



DR. KAHLE



DR. ARENDS



DR. CAPLAN



DR. GREEN



DR. OLDS



DR. SKINNER

HOTEL RESERVATIONS

The Hotel Savery is headquarters for the 1985 IMS Scientific Session. Room reservations may be made by calling, collect, or writing the Hotel Savery, 515/244-2151, 4th and Locust, Des Moines, 50309. Please request that your room be taken from the block reserved by the IMS.

PRESIDENT'S GREETING

This year's Scientific Program has been combined with the IMS House of Delegates. The program offers a full day of presentations — focusing on prevention and wellness; a special risk-management seminar in which members of the audience will be participants; a discussion on the national Health Policy Agenda by Joseph Boyle, M.D., president of the AMA; and a panel of experts to respond to your questions on current health care delivery issues. This program is designed to enhance physicians' medical knowledge and professional competence, and to inform them about changes in the health care delivery system. Dan Gable, internationally-known wrestling coach at the University of Iowa, will give a luncheon address on Friday, April 19. As a champion competitor, Gable was recognized as one of the nation's best conditioned athletes. He coached the 1984 U.S. Olympic wrestling team. Spouses of physicians are welcome to attend. The 1985 Program Committee joins me in cordially welcoming you to the 1985 IMS Scientific Session. We hope it is a rewarding and enjoyable experience.



DR. TYRRELL

John E. Tyrrell, M.D., President
Iowa Medical Society

PROGRAM

FRIDAY, APRIL 19

HOTEL SAVERY

8:00 A.M. — REGISTRATION/INFORMATION
CONTINENTAL BREAKFAST
MEZZANINE



DR. HAUGLAND



MR. HUGHES

GENERAL SESSION

Terrace Room



DR. SNETSELAAR



MR. GABLE

8:50 A.M. — WELCOMING REMARKS
John E. Tyrrell, M.D., Manchester
President, Iowa Medical Society

9:00 A.M. — KEYNOTE PRESENTATION: PREVENTIVE MEDICINE AND WELLNESS PROGRAMS — FAMILY PRACTICE ANNUAL LECTURE, WATERLOO MEDICAL SOCIETY MEMORIAL
F. Douglas Scutchfield, M.D., San Diego, California
Professor and Director, Graduate School of Public Health, San Diego State University

9:25 A.M. — BASIC COMPONENTS OF THE PERIODIC HEALTH EXAMINATION
Dr. Scutchfield

9:45 A.M. — Q & A

9:55 A.M. — ALCOHOL AND OTHER SUBSTANCE ABUSE — BALDRIDGE-BEYE MEMORIAL LECTURE — IOWA FOUNDATION FOR MEDICAL CARE
Stanley Haugland, M.D., Des Moines
Director of the Alcoholism/Drug Abuse Treatment Center
Iowa Methodist Medical Center

The Honorable Harold E. Hughes, Des Moines
Former Governor and U.S. Senator of Iowa
President, Harold Hughes Centers, Inc. — Alcoholism/Drug Abuse Treatment Centers

10:35 A.M. — RECESS

10:55 A.M. — ESSENTIAL HYPERTENSION: PREVENTION AND DIAGNOSIS
Allyn L. Mark, M.D., Iowa City
Professor and Director of Cardiology, Department of Internal Medicine
University of Iowa College of Medicine

11:25 A.M. — Q & A

11:30 A.M. — NUTRITION AND DIET
Linda G. Snetselaar, Ph.D., R.D., Iowa City
Department of Nutrition
University of Iowa College of Medicine

11:55 A.M. — Q & A

NOON — LUNCHEON PROGRAM: REFLECTIONS OF AN OLYMPIC COACH — GRAND BALLROOM
Dan Gable, Iowa City
Head Coach, University of Iowa Wrestling Team and 1984 United States Olympic Wrestling Team

1:30 P.M. — STRESS MANAGEMENT
Robert E. Rakel, M.D., Iowa City
Professor and Head, Department of Family Practice
University of Iowa College of Medicine

1:55 P.M. — Q & A

2:00 P.M. — SMOKING: PREVENTION AND CESSATION
Harry Lando, Ph.D., Ames
Professor of Psychology
Iowa State University

Carol Langel Sipfle, Des Moines
Director of Smoking Intervention
American Lung Association of Iowa

2:25 P.M. — Q & A

2:30 P.M. — SCREENING MAMMOGRAPHY AND OTHER TECHNIQUES FOR BREAST CANCER DETECTION — ERSKINE MEMORIAL LECTURE
Donald C. Young, M.D., Des Moines
Private Practice of Radiology

2:45 P.M. — Q & A

2:50 P.M. — CASE CONFERENCE — PART I: THE MOST INTERESTING CASE OF THE YEAR . . . AND WHAT WE LEARNED FROM IT
Richard M. Hodge, M.D.
Cedar Rapids Family Practice Residency
First of two cases selected from those submitted by Family Practice Residency Programs in Iowa for presentation at the 1985 Scientific Session.



DR. RAKEL



MS. SIPFLE



DR. YOUNG



DR. BUCKWALTER



DR. ROBESON



DR. OLDS

3:00 P.M. — Q & A

3:05 P.M. — RECESS

3:25 P.M. — CASE CONFERENCE — PART II
Mark Bonnell, M.D.
University of Iowa Family Practice Residency
Second of two cases selected from those submitted by Family Practice Residency Programs in Iowa for presentation at the 1985 Scientific Session

3:35 P.M. — Q & A

3:40 P.M. — OSTEOPOROSIS: PREVENTION AND TREATMENT
Joseph A. Buckwalter, M.D., Iowa City
Associate Professor, Department of Orthopedic Surgery
University of Iowa College of Medicine
John W. Olds, M.D., Des Moines
Private Practice of Internal Medicine

4:00 P.M. — Q & A

4:05 P.M. — ANTIMICROBIAL PROPHYLAXIS
Robert A. Clark, M.D., Iowa City
Professor, Department of Internal Medicine
University of Iowa College of Medicine

4:25 P.M. — Q & A

4:30 P.M. — PREVENTIVE PEARLS

OCULAR INJURIES
Thomas A. Brown, M.D., Des Moines
Private Practice of Ophthalmology

PERIODONTAL DISEASE
George A. Robeson, D.M.D., Des Moines
Private Practice of Periodontics

SOLAR INJURIES
Richard M. Caplan, M.D., Iowa City
Professor, Department of Dermatology
University of Iowa College of Medicine

ACOUSTIC INJURIES
Eugene Peterson, M.D., Des Moines
Private Practice of Otolaryngology

5:00 P.M. — ADJOURNMENT

SATURDAY, APRIL 20

HOTEL SAVERY

8:30 A.M. — IMS HOUSE OF DELEGATES

1:30 P.M. — IMS HOUSE OF DELEGATES, REFERENCE COMMITTEE HEARINGS

RISK MANAGEMENT SEMINAR — REDUCE MALPRACTICE, REDUCE CLAIMS

Room 308

The new Iowa Medical Society-sponsored Professional Liability Insurance Program became operational in January. This historic and important development is of consequence to all IMS member physicians. The new program has been implemented upon directive from the IMS House of Delegates. It is a complementary insurance coverage combining the capacities of the Iowa Physicians Mutual Insurance Trust (IPMIT) and the American Medical Assurance Company (AMACO).

A significant dimension of the new IPMIT/AMACO program will be risk management. This seminar is one of the first educational activities of the new program. Information on actual cases will be presented so insured physicians can be alert to similar circumstances. Open discussion is planned with each case.

3:00 P.M. — INTRODUCTION TO OUR RISK MANAGEMENT BLUEPRINT
Pablo Recinos, M.D., Mason City
Chairman, Risk Management Committee/Iowa Physicians Mutual Insurance Trust

REVIEWING THE CLAIMS

CASE NO. 1 — OBSTETRICS
Edward S. Alt, M.D., Dubuque
Member, IPMIT Risk Management Committee

CASE NO. 2 — FAMILY PRACTICE
Robert A. Manderscheid, M.D., Boone
Member, IPMIT Risk Management Committee



DR. CAPLAN



DR. WULFEKUHLER



DR. BOYLE

CASE NO. 3 — ORTHOPEDICS
John E. Sinning, Jr., M.D., Davenport
Member, IPMIT Risk Management Committee

A NATIONAL OVERVIEW
Robert L. Dion, Chicago, Illinois
Vice President & General Manager
American Medical Assurance Company

CONTROL YOUR MALPRACTICE DESTINY THROUGH IPMIT/AMACO
Warren V. Wulfekuhler, M.D., Mason City
Chairman, IMS Medico-Legal Committee
Vice Chairman, IPMIT Board of Directors

5:00 P.M. — ADJOURNMENT

SUNDAY, APRIL 21

HOTEL SAVERY

BREAKFAST WITH BOYLE

Terrace Room

7:00 A.M. — BREAKFAST
Joseph Boyle, M.D., Los Angeles, California
President, American Medical Association

7:45 A.M. — A NATIONAL HEALTH POLICY AGENDA
Dr. Boyle will present a progress report on the Health Policy Agenda (HPA), a project initiated and fostered by the AMA which has brought together many individuals from the private sector. The goal is to develop a long-term, consistent strategy for addressing the health care issues facing the nation. In summary, the purpose of the HPA is to provide a common basis for initiating programs and responding to social, economic, scientific, educational and political circumstances as they evolve.

8:15 A.M. — RECESS

8:30 A.M. — HEALTH CARE ISSUES — ASK THE EXPERT!
GRAND BALLROOM
Dr. Boyle

John E. Tyrrell, M.D., Manchester — Moderator
President, Iowa Medical Society

Jon Jensen, Maquoketa
Chairman, Board of Directors/Iowa Hospital Association

Charles S. Johnson, Des Moines
Chairman, Board of Directors/Health Policy Corporation of Iowa

The Honorable Al Sturgeon, Sioux City
Member, Iowa House of Representatives

Tom Walsh, Cedar Rapids
Science and Medical Writer/Cedar Rapids Gazette

These panel members will respond to questions from the audience on "hot" health care topics: professional and public concerns about health care delivery and costs; medical manpower in Iowa; ethics/costs considerations; and the public's image of the physician.

9:30 A.M. — ADJOURNMENT

10:00 A.M. — IMS HOUSE OF DELEGATES — FINAL SESSION



Dr. Tyrrell



MR. JOHNSON



MR. JENSEN



MR. WALSH

CME CREDIT

The 1985 Scientific Session of the Iowa Medical Society is cosponsored by the University of Iowa College of Medicine. "The University of Iowa College of Medicine is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians and designates this continuing medical education activity as meeting the criteria for 10.5 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association."

In addition, the program has been reviewed and is acceptable for 9½ hours of prescribed credit by the American Academy of Family Physicians.

LUNCHEON

Dan Gable, head wrestling coach at the University of Iowa, will be the guest speaker at a luncheon scheduled on Friday, April 19. Coach Gable has guided the Iowa Hawkeyes to NCAA championships the last 7 years. He coached the 1984 U.S. Olympic wrestling team which won 7 gold and 2 silver medals in 10 freestyle wrestling weight classes.

BREAKFAST

A special breakfast session is scheduled Sunday, April 21, at 7 a.m. Joseph Boyle, M.D., president of the American Medical Association, will report on the Health Policy Agenda. Dr. Boyle is a private practitioner in internal medicine and diseases of the chest in Los Angeles, California.

BANQUET

The Annual Banquet will be Saturday evening, April 20, in the Terrace Room. Special IMS awards will be presented and entertainment will be provided by the Des Moines Community Chorus. A President's Reception will precede the banquet, from 6 to 7 p.m. in the Des Moines Room.

1985 SCIENTIFIC PROGRAM PREVIEW

Synopses of some 1985 Scientific Session topics are included below.

ALCOHOL/SUBSTANCE ABUSE

"I will discuss issues around our number one health problem, alcoholism and other chemical dependencies. I will touch on the successes and failures of our search for a solution to this critical problem." — **The Honorable Harold E. Hughes, President, Harold Hughes Centers, Inc./Alcoholism and Drug Abuse Treatment Centers.**

NUTRITION

"I will discuss current nutrition issues being studied at the University of Iowa: diet and progressive renal insufficiency; diabetes control and complications; diet and breast cancer; and coronary heart disease. I will also give a brief description of what Iowans eat." — **Linda Snetselaar, Ph.D., R.D., Department of Nutrition, University of Iowa College of Medicine.**

STRESS MANAGEMENT

"I will provide an overview of techniques used in stress management. The specific techniques for using deep muscle relaxation exercises will be discussed and demonstrated. The role of anxiolytics in the management of acute and chronic anxiety will be reviewed with particular attention to newer agents." — **Robert E. Rakel, M.D., Professor and Head, Department of Family Practice, University of Iowa College of Medicine.**

SMOKING CESSATION AND PREVENTION

"I will discuss my 15 years of research in smoking cessation. I will also comment more generally on prevention and cessation based on my research and service as a consultant to government agencies. Ms. Sipfle will present an overview of successful techniques used in smoking prevention." — **Harry Lando, Ph.D., Professor of Psychology, Iowa State University.**

BREAST CANCER DETECTION

"Current guidelines and indications for mammography and other breast cancer detection techniques will be reviewed, including a discussion of risk factors, effectiveness of screening examinations, radiation hazards and a preliminary presentation of the Breast Cancer Detection Demonstration Project findings." — **Donald C. Young, M.D., Des Moines, Private Practice of Radiology.**

OSTEOPOROSIS
"In concert with Dr. Buckwalter, clinical aspects of osteoporosis as a problem in every day practice of general medicine will be reviewed, and current therapy, primarily from a preventive approach, will be discussed." — **John W. Olds, M.D., Des Moines, Private Practice of Internal Medicine.**

OCULAR INJURIES
"My presentation will provide an update of the prevention of eye trauma." — **Thomas A. Brown, M.D., Des Moines, Private Practice of Ophthalmology.**

PERIODONTAL DISEASE
"Periodontal disease is an inflammatory disease affecting the gingiva and osseous tissues that support the teeth. Approximately 70% of adults in the U.S. present varying degrees of periodontal disease. Most individuals are not aware they have periodontal disease since it usually progresses for many years with little or no discomfort. Therefore, it is prudent to examine dental patients regularly for the clinical signs of periodontal disease and ensure they receive appropriate therapy when necessary." — **George A. Robeson, D.M.D., Des Moines, Private Practice of Periodontics.**

SOLAR INJURIES
"I will describe and illustrate an assortment of pathological events in the skin that are all directly attributable to sunshine damage to the skin, and which are, therefore, largely preventable." — **Richard M. Caplan, Professor, Department of Dermatology, University of Iowa College of Medicine.**

ACOUSTIC INJURIES
"This brief presentation will cover the causes of acoustical trauma, the nature of the damage to the inner-ear, the audiometric changes and the potential steps that can be taken to minimize acoustical trauma." — **Eugene Peterson, M.D., Des Moines, Private Practice of Otolaryngology.**

1985 SCIENTIFIC SESSION REGISTRATION FORM

Please detach and return this form to IMS headquarters

	I PLAN TO ATTEND — PLEASE CHECK	NUMBER ATTENDING
The Scientific Session		
On Friday, April 19	_____	_____
On Saturday, April 20	_____	_____
On Sunday, April 21	_____	_____
Friday Luncheon Program ($7.50)	_____	_____
Saturday Annual Banquet ($25.00)	_____	_____
Sunday Breakfast Program ($7.00)	_____	_____

Advance payment for meal functions is welcomed and encouraged
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ACKNOWLEDGMENT

The physician members of the Iowa Medical Society give special thanks to the companies listed below for the educational grants provided to support the 1985 Scientific Session.

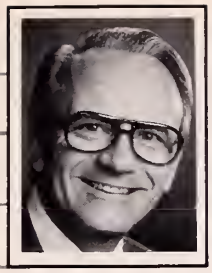
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Appreciation is also extended to **Blue Shield** for sponsoring the coffee functions for physicians and their spouses, and to the **University of Iowa Foundation** and the **College of Medicine** for hosting the President's Reception.

The **Iowa Thoracic Society** has arranged for the presentation on "Smoking: Prevention and Cessation," scheduled at 2 p.m. on Friday, April 19. An ITS Section Meeting will be held on Friday from 9 to 11:30 a.m. with case presentations. It will be in Room 308.

Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



SCIENTIFIC ADVANCES/ IMS ADVANCES

THIS ISSUE of IOWA MEDICINE contains the program for the 1985 Iowa Medical Society Scientific Session. On April 19-21, the IMS House of Delegates will meet in conjunction with the Scientific Session. For a number of years, these 2 events were held separately. In earlier times they were held together. Now we try the old again, and there is something good about returning to the former way.

Attendance at the Scientific Session will benefit by the presence of the 200-plus members of the House of Delegates. True, the delegates have much to do in their legislative roles, but they may have time for scientific stimulation as well. Taking time away from the office to labor on behalf of the medical profession is important, but there should be some opportunity for diversion. An extra day with the spouse to join friends and colleagues in work, refreshment and stimulation of the cerebral state is good therapy.

Moreover, those physicians who are not delegates will have an opportunity to attend the House of Delegates meetings and participate in the reference committee deliberations. Many rank-and-file members have little realization of the time and effort expended by their delegates and the officers of the Society. So much is done by so very few for the benefit of all. We are a large and responsible organization, responsible to our members and to the citizens of Iowa in health matters. Our representatives bear that responsibility in an honorable manner.

Make it your responsibility to join your colleagues in Des Moines on April 19, 20, and 21 for the IMS House of Delegates and the Scientific Session. You owe it to yourself and your profession. Look at the program. Note the varied and interesting subjects to be discussed. The speakers are outstanding. Preventive medicine is the basic theme of the first day's discussions. On Saturday the "risk management seminar" has great merit. Then on Sunday before returning home, hear Joseph F. Boyle, M.D., president of the AMA, report to us on the National Health Policy Agenda. Other experts will comment on health care issues. Have your questions ready and the answers will be forthcoming.

Remember, Friday, Saturday and Sunday, April 19, 20 and 21, at the Hotel Savery in Des Moines. — M.E.A.

NEW LIABILITY INSURANCE PROTECTION

THE INSURANCE DEPARTMENT for the State of New York recently approved a 52% rate hike for a professional liability insurance company. Such rate hikes are becoming more common throughout the United States. Recently, physicians in Iowa have faced increases of 35-50% in their professional liability insurance premiums. On and on goes this ridiculous trend. Higher insurance premiums must naturally be passed on to the patients in the form of increased fees. For some specialists, malpractice insurance premiums are at or over $100,000 annually. To put it more succinctly, that is equivalent to $274 per day or $11.42 every hour of the day.

(Please turn to page 120)

Rate hikes are occurring in Iowa again this year. However, our Iowa Medical Society has embarked upon a program to provide aid to its members. The February issue of IOWA MEDICINE carried a review of our new medical liability protection program. The title of the article admonished IMS members that "success will depend on you."

To this date, the response has been satisfactory. Though there has been some fear of the "new and unknown," the program will be successful. Forty similar physician-owned and operated liability insurance companies exist across the country. Our program is completely integrated to provide Iowa physicians with a one-source contact (IMS Services) on all policy matters. Each phase of the insurance coverage complements all the others. The program is being operated with the necessary insurance expertise and know-how of the Victor O. Schinnerer and Company. Legal support likewise has been retained.

The membership will be kept informed about the progress of this new exciting IMS program. You will hear more of IMS Services, IPMIT (Iowa Physicians Mutual Insurance Trust) and AMACO (American Medical Assurance Company). There are 3 key words in those titles — *service, trust and assurance* — backed by your Society. — M.E.A.

Historical Vignettes

LOOKING BACK

In commemoration of our 75th anniversary, we salute the past. This is being done in cooperation with and in recognition of the interest of the IMS Historical Committee. Appropriately we have titled these brief historical comments Looking Back.

POLIOMYELITIS

PREVENTIVE MEDICINE made a noteworthy advance during the past year when anterior polio-myelitis was definitely placed among the infectious and communicable diseases. Epidemics, increasing in number and magnitude, left little doubt as to the nature of the disease, but Landsteiner, Flexner, and others by means of inoculation experiments upon monkeys proved that it was caused by a living micro-organism. And though this micro-organism has not yet been seen it has been isolated in the laboratory from nasal secretions of infected persons and has been transmitted to monkeys through various mucous membranes as well as by intracranial inoculation. — **G. E. Decker, M.D.,** Davenport, Iowa, *Section of Preventive Medicine,* JOURNAL OF THE IOWA STATE MEDICAL SOCIETY 1911; Vol 1:53-55. . . . The evidence points to the meninges as being the location of the primary lesion. It is not excluded that a direct action takes place on the ganglion cells, but this seems to be less general and constant than that on the meninges. What is required then are antiseptic drugs having power to destroy this virus, and of low toxicity, that can be made to exert their principal action on the meninges and in the subdural space. Hexamethylenamin possesses some of these conditions. It has been used empirically, but definite effects are not known. Chemical addition to hexamethylenamin have been made and used experimentally with good success, but as yet have not been tried upon the human.*

* Extracts from a paper by Simon Flexner, M.D., *Control of epidemic poliomyelitis.* AMERICAN JOURNAL OF DISEASES OF CHILDREN, August, 1911. Reprinted in JOURNAL OF THE IOWA STATE MEDICAL SOCIETY 1911; Vol 1:137-138.

Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



FIRST WORDS

My wife reminded me recently that our first child gave us a strong clue to what life with children might be like when he uttered his first word. It was "no." She further reminded me that he reinforced that attitude and general world view when it came time to speak his first sentence. It was "I don wanna." Some instances of first words deserve their highly memorable status. Persons raised in the Judeo-Christian tradition will certainly remember the biblical opening words, "In the beginning God created. . . ." Americans might remember also the first words of our Declaration of Independence: "When, in the course of human events. . . ."

You may not have thought about it for a while but if you give yourself a chance, maybe you can remember the first words transmitted by Mr. Morse's telegraph in 1844, and correspondingly, the first words spoken over Mr. Bell's telephone in 1876. Mr. Morse tapped out the message, "What hath God wrought?" whereas Mr. Bell said, "Mr. Watson, come here, I need you." Although those messages were transmitted only 32 years apart, I find an enormous difference between them. The first message unquestionably was carefully planned. It employed archaic terms, even for the time (hath and wrought). It spoke of deity and made no reference to human beings. Now remember, if you can, Neil Armstrong's first transmitted words from our moon's surface: "Here is one small step for man, one giant step for mankind," and you know immediately from its aphoristic quality that it had been carefully rehearsed for delivery at the proper moment. Certainly it lacks the spontaneity of Mr. Bell's call to Mr. Watson, which seems truly spontaneous, contains natural speech, makes no reference to deity, and is highly personal and utilitarian.

Mr. Morse and Mr. Bell are yet remembered by name, whereas Mr. Armstrong already seems close to being forgotten, which is to say, he would be considered a "hard" question in a trivia game. Maybe it is because we have no knowledge that Mr. Armstrong was personally creative; he was responding to the instructions of others. (Likewise we do not venerate Mr. Watson nor remember his response to Mr. Bell.) Perhaps if moonwalking and other activities on that surface ever become popular pursuits, we might then remember who did it first. Furthermore, the modes of communication introduced by Mr. Morse and especially by Mr. Bell have been enormously influential. Even so, the devices and techniques for communication are still likely to change hugely. Even Mr. Bell probably would not recognize, or would be amazed (but delighted), at the variations that have grown from his initial invention. Books, magazines and newspapers are almost nowhere printed in the manner developed by Gutenberg, and yet we remember and credit him for revolutionizing communications by developing movable type.

> ***"Perhaps if moonwalking and other activities on that surface ever become popular pursuits, we might then remember who did it first."***

Has any of this to do with education? I de-

(Please turn to page 132)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

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DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

INSOMNIA: EVALUATION AND TREATMENT

THE TREATMENT OF INSOMNIA is a challenging clinical problem. Insomnia has many causes and there are many hypnotic drugs available for its treatment. But the administration of hypnotic drugs may be associated with adverse effects. Furthermore, it is difficult to decide which patients require hypnotic drug therapy and which hypnotic drugs to prescribe. This review will provide current information about insomnia and hypnotic drugs so that the above treatment decisions can be made rationally.

Insomnia is the subjective perception of inadequate sleep. Individuals may complain of difficulty falling asleep, difficulty staying asleep, and/or early morning awakenings, in addition to daytime symptoms (sleepiness, fatigue, irritability) attributed to inadequate sleep.

Insomnia is a common complaint. A recent survey found that 17% of adults complain of severe insomnia and physicians prescribe hypnotic drugs to about 10% of these patients.[1]

Insomnia may be classified in the time frame over which it occurs; each type has multiple potential causes as discussed below. Transient insomnia is usually due to alteration in sleep environment (e.g., noise or unfamiliar surroundings) or alteration in time of sleep (e.g., intercontinental travel or shift work). Short-term insomnia may be due to emotional problems (e.g., secondary to job loss or marital difficulties) or medical illnesses (e.g., pain, nocturnal dyspnea, or urinary frequency). This type of insomnia may be recurrent. Chronic insomnia is most often due to psychiatric disorders (e.g., depression, anxiety, mania, or schizophrenia). However, drug-induced causes (e.g., stimulants, excessive caffeine, or ethanol; or sedative-hypnotic withdrawal) must also be considered. Less common causes of chronic insomnia include specific sleep disorders (e.g., sleep apnea syndromes or nocturnal myoclonus).

It is important to assess the cause of insomnia before a comprehensive treatment plan is formulated. Insomnia secondary to specific medical or psychiatric disorders may respond to treatment of the primary cause, that is, antidepressants for depression, analgesics for pain, and so forth. Patients with symptoms suggestive of sleep apnea (snoring, excessive daytime sleepiness) may benefit from definitive diagnostic testing in a sleep laboratory since hypnotic drugs may worsen ventilation in these conditions;[2] furthermore, patients with an upper airway obstructive component to their sleep apnea may benefit from establishment of an adequate airway (e.g., by tracheostomy). Patients with a situational cause of insomnia may benefit from environmental manipulation or psychotherapy.

Part of the comprehensive treatment of insomnia, in addition to the specific therapies discussed above, includes consideration of the use of both hypnotic drugs and other general (nonpharmacologic) measures. Nonpharmacologic measures include the establishment of

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a regular daily schedule including a designated bedtime, the avoidance of "napping" in the daytime; regular exercise; and the avoidance of caffeine, nicotine, and alcoholic beverages.

Benzodiazepines are the hypnotic drugs of choice when indicated as adjuncts in the treatment of insomnia. Flurazepam, temazepam, and triazolam are the benzodiazepine hypnotics which are approved by the Food and Drug Administration for the treatment of insomnia. Other hypnotic drugs such as the barbiturates, glutethimide, and methaqualone have the disadvantage of potential lethality when taken alone in overdose; hence, these drugs should be avoided and will not be further discussed.

The efficacy and adverse effects of hypnotic drugs have been assessed in both clinical trials and sleep laboratory studies. Sleep laboratory studies have the advantage of providing subjective as well as objective data about various sleep parameters such as sleep latency (time until onset of first sleep), sleep duration (total sleep [or awake] time), and sleep maintenance (number of awakenings) during drug administration and withdrawal. Clinical trials, although largely subjective, have the advantage of including larger numbers of subjects which are needed for the evaluation of adverse drug effects.

"A recent survey found that 17% of adults complain of severe insomnia. . . ."

The efficacy of benzodiazepine hypnotics in inducing sleep is related to their rate of absorption. Flurazepam (absorbed in 0.5 to 2 hours) demonstrates somewhat greater efficacy than triazolam (absorbed in 1.3 hours) in reducing sleep latency;[3, 4] temazepam, marketed in the U.S. in a hard gelatin capsule which results in slow absorption (2-3 hours), is relatively ineffective in reducing sleep latency.[3]

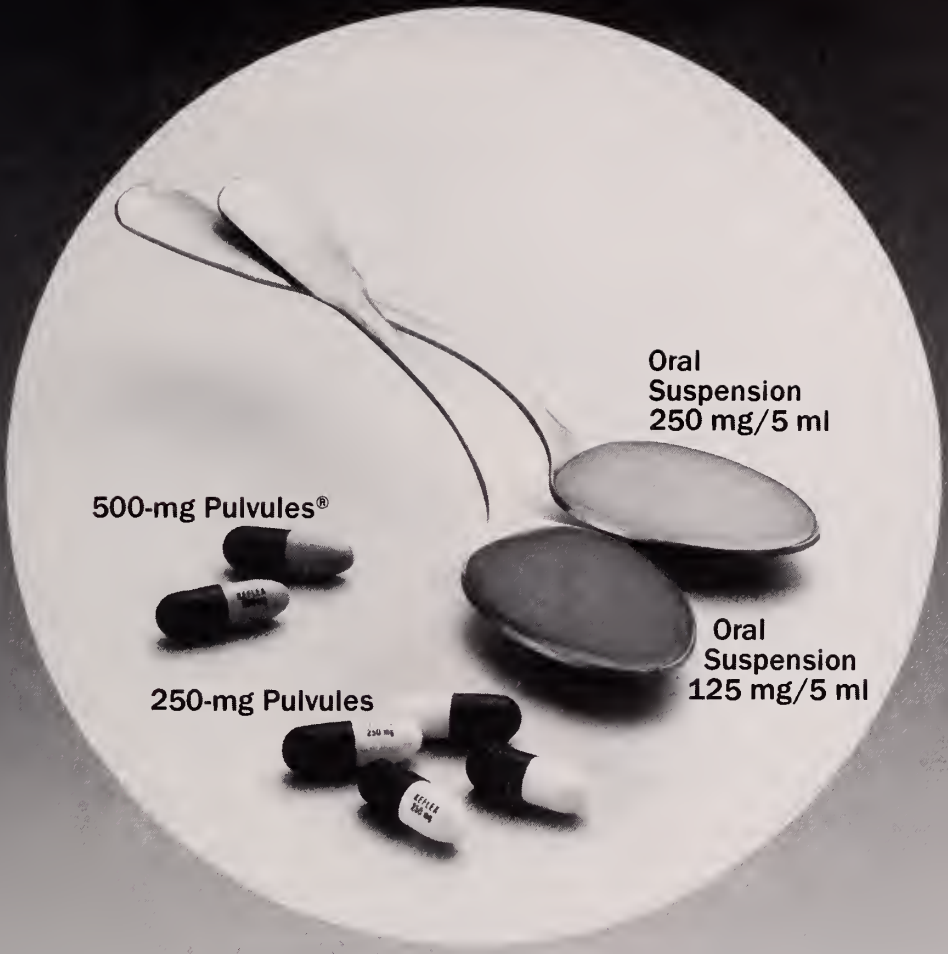
All 3 benzodiazepine hypnotics have demonstrated efficacy in maintaining sleep for periods of up to several weeks when compared to a placebo or baseline period before drug administration (a *within* group comparison).[3, 4] However, a recent well-designed, long-term, randomized sleep laboratory study comparing the effects of flurazepam, triazolam, and placebo in groups of subjects complaining of insomnia demonstrated a significant *within*-group increase in sleep duration in each treatment group (including the placebo group) when compared to the baseline (but not the placebo) period.[4] Furthermore, there were no significant differences in sleep duration *among* the groups with administration of either of the benzodiazepine drugs or placebo. Thus, the placebo effect on sleep duration in hypnotic drug studies can be striking and the additional benefit of hypnotic drug administration may not be large.

Each of the benzodiazepine hypnotics has other advantages and disadvantages which seem to be related to the elimination half-life of the drug. Flurazepam, a long half-life drug ($t\frac{1}{2}$ of the active metabolite desalkylflurazepam is 74 to 160 hours), demonstrates a carry-over hypnotic effectiveness during the initial night or 2 after the drug is discontinued.[3, 4] Furthermore, rebound insomnia (defined as a worsening in sleep above baseline levels after benzodiazepine discontinuation) tends to be delayed (onset 4 to 8 nights after flurazepam discontinuation) and mild if it occurs at all.[3, 4] However, flurazepam administration may be associated with decreased daytime alertness and performance ability although this effect lessens by the third week of administration.[2, 3, 4] Triazolam, a very short half-life drug ($t\frac{1}{2}$ is 2.6 hours), is associated with minimal if any daytime sedative effects.[2, 4] In fact, triazolam has been associated with increased anxiety on mornings after several weeks of drug administration.[5] Prominent rebound insomnia (defined above) occurs on the first one or 2 nights after triazolam discontinuation and early morning insomnia (an increase in wakefulness during the final hours of sleep on drug nights) may occur after several weeks of drug administration.[4, 5] Temazepam, a short-to-intermediate half-life drug ($t\frac{1}{2}$ is 15 hours), is probably associated with intermediate degrees of daytime sedation and rebound insomnia.[3]

In choosing a benzodiazepine hypnotic, the physician needs to consider the desirability of daytime sedation. If desired, flurazepam is recommended; if daytime sedation is to be avoided, triazolam is recommended. The duration of therapy should be short: only a night or 2 for transient insomnia and usually less than 3 weeks for short-term insomnia. If longer courses of therapy are necessary, gradual drug

(Please turn to page 126)

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withdrawal is essential to avoid a withdrawal syndrome (usually symptoms and signs of anxiety and, rarely, seizures); triazolam should not be prescribed for chronic administration due to the potential problems described above (early morning insomnia, daytime anxiety, and prominent rebound insomnia on withdrawal). The recommended dosage range of flurazepam is 15 to 30 mg; triazolam is 0.25 to 0.5 mg. The lowest effective dosage should be used and skipping nights of drug administration after effective sleep is achieved is encouraged, especially with flurazepam which has substantial carry-over effectiveness. Other benzodiazepines may be used as hypnotics and are probably effective for this indication, for example, diazepam, lorazepam, or alprazolam.[6]

Other concerns with hypnotic drug therapy include the occurrence of additional adverse effects, the potential for drug interactions, and the cost of these agents. In addition to sedation, benzodiazepines may cause impairment of learning, memory, and motor coordination and performance. Confusion (mostly in the elderly) and paradoxical CNS effects (e.g., disinhibition) are less common adverse effects, and hypersensitivity reactions are rare. The potentiation of the adverse CNS effects of benzodiazepines (described above) by other CNS depressant drugs (including ethanol and the opioid drugs) is the major drug interaction of concern. Therefore, patients must be cautioned about engaging in potentially dangerous activities such as driving an automobile when taking benzodiazepines and other CNS depressants. The pharmacokinetic effect of cimetidine in decreasing diazepam clearance has been shown to be of minimal clinical importance in otherwise healthy patients under 50 years of age on long-term diazepam therapy.[7] The pharmacy acquisition cost of flurazepam (Dalmane) 30 mg is $18.40 per 100 capsules; triazolam (Halcion) 0.5 mg is $22.40. Only flurazepam is stocked at The University of Iowa Hospitals and Clinics pharmacy department.

In approaching patients with insomnia, the physician should remember that insomnia is a symptom, not a disease and that hypnotic drugs treat only the symptom, not the basic disease. Therefore, the primary cause of insomnia should be sought and specifically treated if possible. Nonpharmacologic measures are important adjuncts in the treatment of insomnia and should be employed prior to or in conjunction with the use of hypnotics. Hypnotic drugs are not required in many patients with insomnia. Even if the safest hypnotics are selected for use (i.e., the benzodiazepines), these drugs have adverse effects during acute and chronic administration and may worsen sleep and cause other withdrawal symptoms transiently on discontinuation as discussed above. Therefore, the use of hypnotic drugs requires careful consideration. — Mark J. Goldberg, M.D., Assistant Professor of Internal Medicine and Pharmacology.

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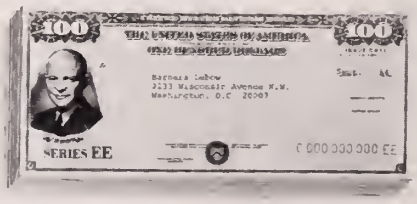


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RECENT BOOKS

Balsam, Rosemary M. and Balsam, Alan, 1984, *Becoming a Psychotherapist:* A Clinical Primer, 2nd edition, University of Chicago Press, Chicago and London, paperback, $12.95. (An introduction to psychotherapy that goes beyond being a primer for the neophyte.)

Franklin, Jon and Sutherland, John, 1984, *Guinea Pig Doctors: The Drama of Medical Research Through Self-Experimentation,* William Morrow and Co., New York, N. Y., $17.95. (Stories of eight doctors who subjected their own bodies to test their theory to uncover such truths as the etiology of cholera, the mysteries of the transmission of yellow fever, and the effect of G-forces upon the human body.)

Presser, Janice, 1984, *When Two Become Three: The Couple's Book of Pregnancy,* Doubleday and Co., New York, N. Y., paperback, $12.95. (Written for parents-to-be, based on interviews with parents as well as professionals, this book will have an appeal to young progressive couples embarking upon parenthood.)

Sautter, H., Straub, W., Turss, R., and Rossmann, H. (Translated by F. C. Blodi, M.D.), 1984, *Atlas of the Ocular Fundus,* third edition, Urban and Schwarzenberg, Baltimore and Munich, $124.50. (This is a fantastic work; the photography, the reproduction, and the quality of the finished book, 523 figures depicting physiological variations and congenital anomalies, diseases of the optic nerve as well as diseases of the retina and the choroid. One chapter covers the changes seen with injury. The price may seem high, but the price of quality is likewise high. Doctor Blodi, professor of ophthalmology at the University of Iowa College of Medicine, is to be congratulated for his part in this publication.)



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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

ADOLESCENT HEALTH CONFERENCES: A SUCCESSFUL BEGINNING

MOST INDIVIDUALS RECOGNIZE ADOLESCENCE as a healthy period of life, and it is true morbidity and mortality are lower during this period. However, it would be a serious error, to conclude health problems specific to adolescents do not exist or are not serious.

Adele Hofman in the foreword of her new book, *Adolescent Medicine,* cites several important facts. Accidents and suicides lead the list of causes of adolescent death. Surveys of adolescent populations show an incidence of 40-60% abnormal findings on physical examination. Inquiries from adolescents reveal a high priority for help with sexual relationships, depression, obesity, acne and worries about health. Gonorrhea remains a significant problem among adolescents.

The Advisory Council on Adolescent Pregnancy, recognizing adolescent pregnancy was a manifestation of adolescent problems, included in its recommendations to the Iowa State Department of Health (ISDH) the development of regional conferences. Beginning in May, 1984, ISDH conducted 4 multidisciplinary conferences entitled *"Adolescence: The Process of Growing Up."* The conferences, in Mason City, Cedar Rapids, Sioux City and Des Moines, shared as their purpose the provision of information to adults who had contact with adolescents on a regular basis. It was hoped the conferences would heighten the awareness of the public and professionals about the physical, emotional and social factors affecting the health of adolescents in Iowa.

The conferences attracted over 600 participants including representatives from the following disciplines: Medicine, Law Enforcement, Nursing, Psychology, Education, Youthworkers, Clergy, and Parents.

Each conference was planned by a local committee and shared a similar format. Each began with a keynote by Dr. Donald Greydanus (Director, Adolescent Medicine, Raymond Blank Hospital), and was followed by a series of workshop topics from which participants could select 2 or 3 topics. Though each planning committee was free to select any set of 10 topics for the workshop, it is significant the following 8 topics were of common concern to all 4 committees: *Communicating with Teenagers, Adolescent Sexuality, Stress in Teens, Eating Disorders in Teens, Legal Rights of Minors, Depression & Suicide, Teenage Drug Use, and Chronic Adolescent Health Problems.*

Cedar Rapids, Sioux City and Des Moines committees shared another workshop topic, *"The Impact of Religion on Adolescents."* Specific workshops included, *"What Can I Expect from my Teenager"* in Mason City, *"Runaways"* in Cedar Rapids, *"Sexual Abuse & Incest"* in Sioux City and *"The Effects of Divorce"* in Des Moines.

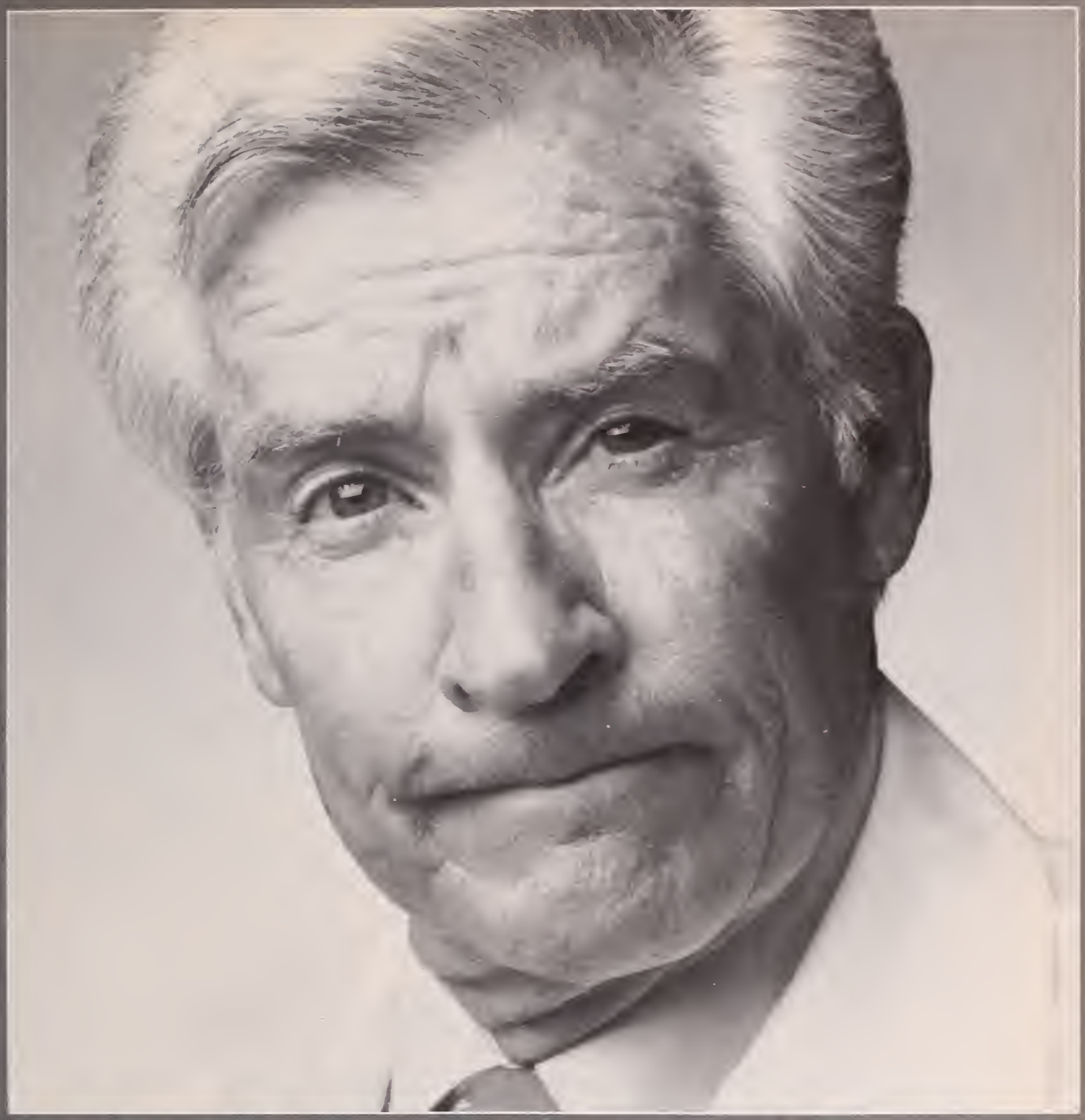
The concerns of the participants on specific aspects of adolescent health were reflected in the workshop they attended.

Of the more than 600 attendees, 35% attended the workshop on Communication; 32% the Depression & Suicide workshops; 29% the workshop on Stress and 24% the Adolescent Sexuality Workshop.

Participant evaluations scored the conferences excellent and many comments indicated a thirst for more training in adolescent health.

(Please turn to page 132)

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(Continued from page 130)

Many participants remarked that in their professional training little time was devoted to adolescent health and they are frequently at a loss to understand or to assist teens with their problems.

The Department of Health wishes to thank the many professionals who donated their time and expertise as planners and/or speakers. Local planning committee Chairs, Dr. David L. Little (Mason City), Dr. Julianne H. Thomas (Cedar Rapids), Mike Stiles (Sioux City) and Dr. Theodore D. Scurletis (Des Moines) deserve special recognition.

The Department believes the adolescent health conferences demonstrated the need for a formal adolescent health program and will be forming an Advisory Committee toward that end. Members of this Committee will be selected from those organizations and disciplines which have concern and interest in adolescent health. Since physicians were underrepresented at the conferences, the Department would welcome suggestions on the development of a formal adolescent health program.

OUR MAN IN EDUCATION

(Continued from page 121)

fend my "yes" by arguing that those who function in a frame of historical reference can far more easily understand and tolerate the rapid technological changes that influence our lives and our work. Reading about history and feeling awe for what has happened before is unarguably broadening. Although some historians almost seem to agree with Henry Ford ("History is bunk") when they claim that history teaches no lessons, that is not to say we cannot learn from history.

Confront again the distinction between teaching and learning. Just as in continuing medical education, what is learned through use and re-use is best remembered. What the teacher does, that is to say, the teaching, is only a means to learning. That crucial distinction between means and ends, as in other situations, must be maintained clearly.

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The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg, for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

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Disease	Dec. 1985 Total	1985 to Date	1984 to Date	Most Recent Cases Reported From These Counties
Amebiasis	0	0	0	
Brucellosis	0	0	0	
Chickenpox	907	907	515	Scattered
Compylobacter	5	5	19	Dubuque, Johnson, Polk
Cytomegalovirus	0	0	3	
Eaton's Agent infection	0	0	0	
Encephalitis, viral	3	3	1	Johnson, Pottowottomie
Erythemo infectiosum	0	0	0	
Gastroenteritis (GIV)	1481	1481	1183	Scattered
Giardiosis	26	26	16	Scattered
Hepotitis, A	1	1	3	Emmet
Hepatitis, B	7	7	10	Scattered
Hepatitis, Non A-B	0	0	4	
Hepotitis type unspecified	1	1	1	Foyette
Herpes Simplex	69	69	47	Scottered
Herpes Zoster	0	0	0	
Histoplosmosis	0	0	0	
Infectiaus monanucleosis	10	10	14	Scottered
Influenzo, lob canfirmed	8	8	1	Scattered
Influenzo-like illness (URI)	2517	2517	3170	Scottered
Legionellosis	1	1	0	Josper
Molaria	0	0	0	
Meningitis aseptic	5	5	2	Dollos, Dickinson, Johnson, Polk, Scott
bocteriol	18	18	16	Scottered
meningococcol	2	2	8	Monona, Story
Mumps	1	1	1	Fremont
Pertussis	0	0	3	
Robies in onimols	16	16	8	Scottered
Reye Syndrome	1	1	0	Dubuque
Rheumatic Fever	0	0	0	
Rubella (German meosles)	0	0	0	
Meosles	0	0	0	
Salmonellosis	9	9	25	Scottered
Shigellosis	1	1	7	Polk
Taxic Shock Syndrome	1	1	1	Jahnsan
Tuberculosis totol ill	10	10	4	Scottered
boct. pos.	9	9	0	Scottered
Typhoid Fever	0	0	0	
Venereol diseoses: Gonorrheo	340	340	342	Scattered
Syphilis	0	3	3	

Other Non-Repartable Diseases: Ascaris — 1, Franklin; Chlomydio — 1, Jahnson; Ureoplosmo Ureolyticum — 7, Johnson, 1, Polk; Yersinio — 1, Dubuque, 1, Jahnsan; Porainfluenzo Type 3 — 1, Scott.

News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. David Daining has joined the Pella Medical Center, P.C. Dr. Daining received the M.D. degree at Wayne State University School of Medicine in Detroit, Michigan; interned and served his internal medicine residency at Butterworth Hospital in Grand Rapids, Michigan. Dr. Daining was formerly associated with Rehobath Christian Hospital in Gallup, New Mexico. . . . **Dr. Clarence H. Denser, Jr.,** Des Moines, is serving as medical director for Total Health Network of Iowa, the health maintenance organization project of Blue Cross and Blue Shield of Iowa.

Dr. Paul E. Huston, University of Iowa professor emeritus, recently was recognized by the Iowa Psychiatric Society for his leadership and international reputation. Dr. Huston is a founding member of IPS and served as its first president from 1949 to 1950. He received the M.D. degree at Yale University and began his career at the U. of I. as a senior resident in psychiatry. From 1956 to 1971, he was head of the U. of I. Department of Psychiatry and director of the Psychiatric Hospital. Dr. Huston is chairman of the IMS Historical Committee. . . . **Dr. J. C. Aguiar,** Waterloo, has been named a fellow of the American Academy of Otolaryngic Allergy, a subdivision of the American Academy of Otolaryngology — Head and Neck Surgery, Inc. **Dr. David Cathcart** will join the Community Family Practice

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Clinic, P.C. in Clarion in July. Dr. Cathcart received the M.D. degree at the U. of I. and is currently in his final year of a Family Practice residency at Broadlawns Medical Center in Des Moines. . . . **Dr. Harry J. Brom,** Creston, has retired from the Creston Medical Clinic after 30 years of practice in the Creston area. Dr. Brom received his medical education at the College of Osteopathic Medicine in Des Moines and interned in Dallas, Texas. He began his medical practice in Afton in 1954. . . . **Dr. R. Bruce Bedell** has been named president of the Woodbury Medical Society. Other officers elected are **Dr. James J. Goebel,** president-elect; **Dr. John N. Redwine,** secretary; and **Dr. Paul E. Burke,** treasurer. All are Sioux City physicians.

Dr. Alfred Brendel, Central City, retired from medical practice in December. Dr. Brendel received the M.D. degree at the University of Iowa and located in Central City in 1952. . . . **Dr. Glen Gabrielson** has been elected president of the Fort Madison Community Hospital medical staff; **Dr. Kathy Anderson,** vice president; and **Dr. Frank Richmond,** secretary. All are Fort Madison physicians. . . . 1985 officers of the Black Hawk County Medical Society are **Dr. Ronald D. Flory,** president; **Dr. Dale G. Phelps,** president-elect; **Dr. Paul D. Pettit,** secretary; and **Dr. Robert L. Saveride,** treasurer. Drs. Flory, Pettit and Phelps are Waterloo physicians. Dr. Saveride practices in Cedar Falls. . . . **Dr. C. W. Maplethorpe, Jr.,** Toledo, retired from medical practice in January. Dr. Maplethorpe received the M.D. degree at the U. of I.; interned at St. Joseph's Hospital in Phoenix, Arizona and served a one-year residency in general practice at St. Elizabeth's Hospital in Lafayette, Indiana. He joined his father, the late Dr. C. W. Maplethorpe, Sr., in medical practice in Toledo in 1948. . . .**Dr. Deborah George** has opened a family practice in Mount Vernon. Dr. George received the M.D. degree at the U. of I. and completed her family practice residency in Cedar Rapids. . . . **Dr. Donald Mackenzie,** Fort Madison, has been named a fellow of the Royal College of Surgeons in Canada.



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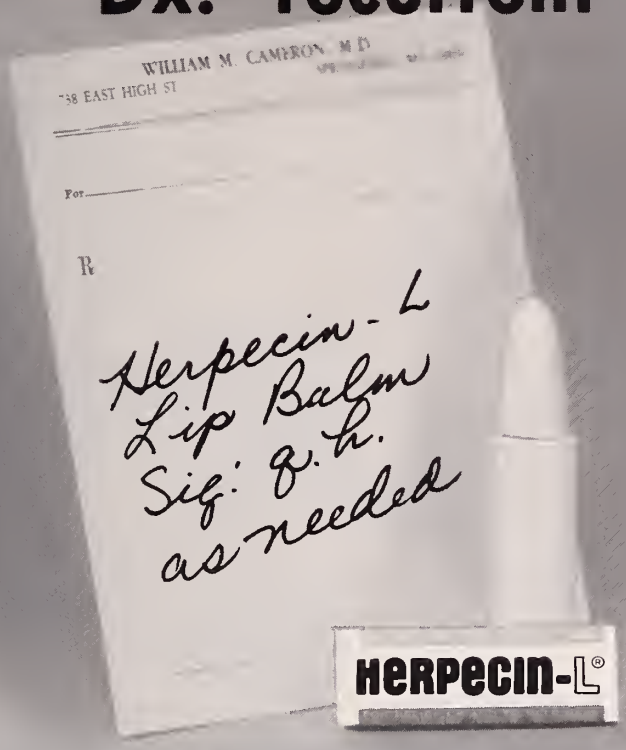
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A Monthly Commentary

IN THE PUBLIC INTEREST

Iowa's Living Will

SHOULD IOWA have a law that allows adults to declare that they want life-sustaining procedures withheld if terminal illness reaches the point of severity where treatment decisions cannot be made?

Yes, said the Iowa General Assembly in February when it approved legislation which was signed by the Governor in early March.

Thus Iowa joins approximately 20 other states to take this statutory action. Authority now resides with an adult to issue a declaration stating that life-sustaining procedures be withheld if terminal illness exists and there is no capacity to make treatment decisions.

The Iowa Medical Society backed this legislation because it establishes a procedure wherein patients can state the extent of a physician's obligation to preserve life in situations where medical procedures or interventions would serve only to postpone artifically the moment of death by sustaining, restoring or supplanting a vital function. In short, the Iowa Medical Society has said enactment of a "natural death act" is appropriate for the times.

Called the "Life-Sustaining Procedures Act," the new law includes the following policy statement:

The legislature finds that all adults have the fundamental right to control the decisions relating to their own medical care, including the decision to have medical or surgical means or procedures calculated to prolong their lives provided, withheld or withdrawn. This right is subject to certain interests of society, such as the protection of human life and the preservation of ethical standards in the medical profession. The legislature further finds that the artificial prolongation of life for persons with a terminal condition may secure only a precarious and burdensome existence, while providing nothing medically necessary or beneficial to the patient. In order that the rights and intentions of persons with such conditions may be respected even after they are no longer able to participate actively in decisions concerning themselves, and to encourage communications between these patients, their families, and their physicians, the legislature declares that the laws of Iowa shall recognize the right of an adult to make a written declaration instructing the adult's physician to provide, withhold, or withdraw life-sustaining procedures or to designate another to make treatment decisions, in the event the person is diagnosed as suffering from a terminal condition.

Appropriately, the new Iowa law offers a declaration which may, but need not, be the precise language used by an interested party. The declaration contained in the law reads:

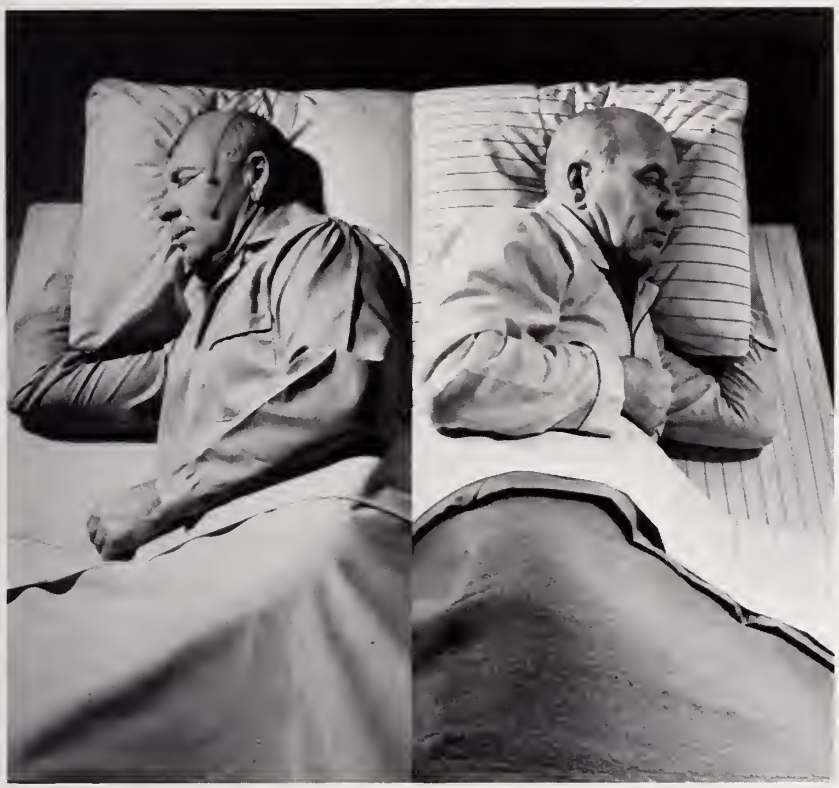
If I should have an incurable or irreversible condition that will cause my death within a relatively short time, it is my desire that my life not be prolonged by administration of life-sustaining procedures. If my condition is terminal and I am unable to participate in decisions regarding my medical treatment, I direct my attending physician to withhold or withdraw procedures that merely prolong the dying process and are not necessary to my comfort or freedom from pain.

The new Iowa statute provides that when an attending physician who has been provided with a declaration decides the declarant is in a terminal condition, this decision must be confirmed by another physician. This confirmation must be entered in the medical record.

This subject is one with agonizing implications for medicine. The physician is committed to prolong life. There is also a commitment to relieve suffering. When suffering overrides the prolongation of life the physician, patient and/or family members now have a further societal tool to use in resolving the conflict.

March 1985
Iowa Medicine

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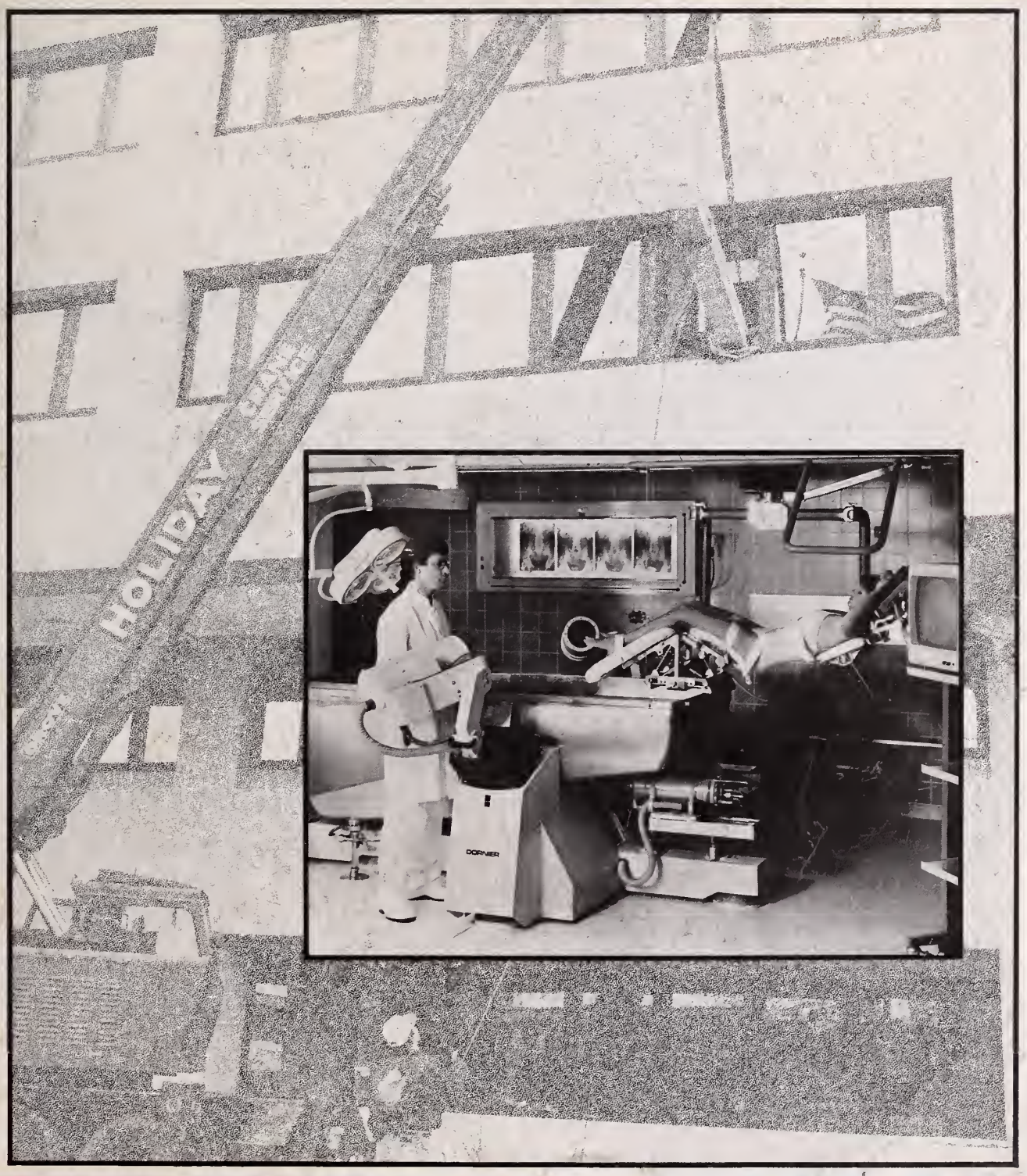
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April 1985

IowaMedicine

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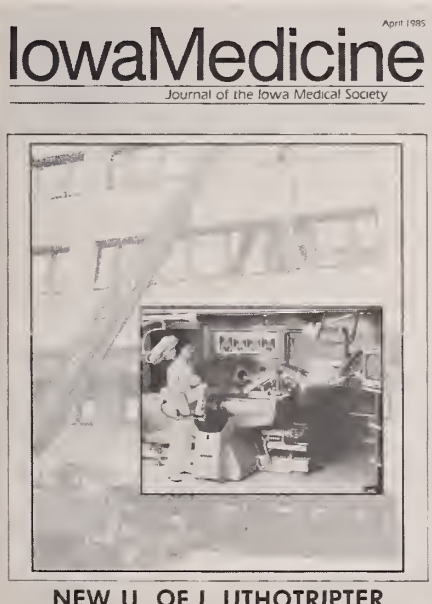
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NEW U. OF I. LITHOTRIPTER

ABOUT THE COVER — A crane had to be used recently to help the new extracorporeal shock wave lithotripter find its home at University Hospitals in Iowa City. University Hospitals is said to be one of the first hospitals in the United States to employ this new technology following approval of the equipment in January by the Food and Drug Administration. An article on this new technology appears on page 153 of this 1985 University issue.

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PRESIDENT'S PRIVILEGE



PRIDE AND PREJUDICE

With apologies to Jane Austen who immortalized the above words, they come to mind as we look forward to the annual meeting of the Iowa Medical Society House of Delegates.

Iowa physicians are proud of the organization which represents them. Naisbitt in his recent book MEGATRENDS speaks of the changes taking place in society at the grass roots level and particularly, state level, rather than a national trend.

The Iowa Medical Society is indeed a grass roots organization with its policy and direction established and reviewed annually by the delegates elected in county medical society meetings. These delegates review all activities of the leadership for the past year and then consider resolutions coming to the House of Delegates, reviewing present policy of the Society and modifying it as they deem appropriate. During the past year, committees have been active in studying issues of concern to the membership. Reports of these committees will be reviewed at the 1985 session of the House.

Pride in our democratic process must lead to further physician involvement in the IMS, a "prejudice" for the IMS process. The IMS needs physician participation and support to wisely choose its direction for the future. Physician concern for patient welfare must be understood by legislators and community leaders who wrestle with problems of cost and access.

Our prejudice is evident when we point, with pride, to the monumental accomplishment represented in the well conceived and implemented Iowa Physicians Mutual Insurance Trust.

In this column this year, we have not called attention to the continuing excellence of the programs of the Iowa Medical Society Auxiliary. The dedication and effectiveness of this organization are too often taken for granted.

So we look forward to the coming House of Delegates — a time for review, renewal, and rededication to those principles which have made Iowa medicine a leader in a society searching for answers to urgent problems.

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G. FRANK JUDISCH, M.D.
University of Iowa, Iowa City, IA
"Childhood Eye Problems the Family Physician Should Know"

CHAD L. WILLIAMS, M.D.
Iowa Methodist Medical Center
Des Moines, IA
"IV Streptokinase in Acute MIs, and Balloon Angioplasty"

JAMES R. SKINNER, M.D.
Mercy Hospital Medical Center
Des Moines, IA
"New Surgical Perspectives in the Management of Acute Myocardial Infarction"

MICHAEL J. KITCHELL, M.D.
McFarland Clinic, Ames, IA
"Management of Parkinson's Disease and other Shaky Subjects," and "New Strategies in Migraine Management"

THOMAS P. FERLIC, M.D.
University of Nebraska, Omaha, NE
"Common Orthopedic Problems in Children" and "Casting and Splinting Techniques — Hands On"

Evening Banquet, 7 p.m.
"Medicine vs. Media" by **Alan Blum, M.D.**

SATURDAY MAY, 11

LARRY D. BEATY, M.D.
Broadlawns Medical Center
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"Scanning and Screening at BMC: Flexible Sigmoidoscopy"

JAMES D. KIMBALL, M.D.
Broadlawns Medical Center
Des Moines, IA
"Scanning and Screening at BMC: Use of Ultrasound in Obstetrics"

ALAN BLUM, M.D.
New York State Journal of Medicine
Lake Success, NY
"Smoking Prevention and Cessation — Beyond Gimmickery and Chewing Gum"

"Directions and Developments in Medical Care in the Immediate Future"
Charles S. Johnson, Health Policy Corporation of Iowa;
D. Eugene Sibery, Blue Cross and Blue Shield of Iowa;
Michael Richards, M.D., Mid-Iowa Medical Associates;
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The Dean's Greeting

1985 University Issue — A Slice of Life

JOHN W. ECKSTEIN, M.D.
Iowa City



John W. Eckstein, M.D.

Once again IOWA MEDICINE is pleased to designate April as the University issue. It has become traditional to allocate these pages to an overview from the College of Medicine and University Hospitals and Clinics. Dean Eckstein whets the appetite for what is to follow.

As MY FACULTY, staff and student colleagues work to meet their *University Issue* deadlines, I find myself thinking again how fortunate we are to be able to relate in this way to our state professional society. Many good things befall the College through our association with the Iowa Medical Society.

Even to cite them categorically would impose on the generosity of Editors Alberts and Neumann, so I will simply note that they embrace a remarkable variety of educational and social activities and contacts that we find most enriching.

In any case, Sophomore Doug Lind has some special thoughts to offer in this area; you will enjoy his exposition of the student point of view.

Dr. Carol Aschenbrener's description of the *Human Dimensions in Medicine* course is bound to provoke a question in many minds, "Why didn't they have something like that when *I* went to medical school?"

Dr. Paul Seebohm makes a case for not extending the Area Health Education Center concept beyond Iowa's highly successful Family Practice Residency Program.

The continuing cooperation of the practicing profession is credited by several other colleagues for making various good things happen, including an expanded transplantation program (Drs. James Schulak, Dai Nghiem and Robert Corry), great strides in emergency medicine training (Ken Stults), and our popular and highly beneficial preceptorship program (Dr. Charles Driscoll).

Again this year University Hospitals and Clinics provides updates on several programs, including cancer treatments and the promising new treatment for kidney stones.

Among them, these articles provide a "slice of life" from the College of Medicine as it goes about its business in 1985. I hope you will find them useful. I know you will find them interesting.



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Lithotripsy Arrives At University Hospitals

The ever-expanding field of medical technology adds yet another dimension to patient care as a new U. of I. lithotripter goes into service in Iowa City this month. University Hospitals is only the second U. S. hospital to install this West German device since FDA approval.

Urologists at University of Iowa Hospitals are now using an extracorporeal shock wave lithotripter to relieve patients of kidney stones without major surgery.

The lithotripter, which disintegrates kidney stones with shock waves, was delivered to University Hospitals in February from West Germany where it is manufactured by Dornier Systems GmbH. University Hospitals is only the second hospital in the United States to employ the new technology following approval of the equipment in January 1985 by the Food and Drug Administration.

"We are very excited about receiving this lithotripter," said Stefan Loening, M.D., professor, Department of Urology, adding that the service is available to physicians in Iowa and western Illinois and other parts of the nation who refer patients to University Hospitals.

Dr. Loening has participated in a training program in West Germany where the lithotripter was developed by Dornier and urologists at the University of Munich.

The lithotripter is the newest of several devices developed in the past 10 years that offer alternatives to surgery for people with kidney stones.

Until the mid 1970s, surgery was the only method used to remove kidney stones. Kidney stone surgery normally requires an 8- to 10-inch incision, 5 to 14 days hospitalization, and up to 6 weeks of recuperation. In contrast, lithotripsy is a non-invasive procedure that does not have the risks associated with major surgery and requires a hospital stay of only 3 to 4 days. Patients can return to a normal lifestyle within days. All patients with kidney stones referred to University Hospitals will be evaluated for the possibility of receiving a lithotripsy procedure.

During a lithotripsy a patient is immersed in a tub of water from the neck down. X-ray units in the lithotripter locate the stones and the patient is positioned so the stones are at the greatest energy point of the shock waves. Urologists monitor the kidney stones on a fluoroscope, watching as an underwater electrode generates multiple shock waves.

In the procedure, which lasts about one hour, the pressure of the shock waves pulver-

See Cover Photograph

izes the stones into sand-like particles while not affecting other tissues. The particles are passed out of the body in the urine during the following week.

In treatments of 1,000 patients in West Germany, lithotripsy proved very successful. The stones of about 88% of the patients were disintegrated in one lithotripsy procedure. In about 10% of the patients, the stones were so large they required 2 (rarely more) treatments and/or secondary, minor surgery. The remaining 2% of patients underwent conventional surgery.

Questions and Answers — An Interview with Paul M. Seebohm, M.D.
Executive Associate Dean,
University of Iowa College of Medicine

Higher Priorities Than AHEC

IN THE CURRENT SESSION of the Iowa General Assembly, attention has been given to a bill to establish a new community health education concept in the State of Iowa. The sponsors of the bill suggest that such a program would provide support for the faltering rural hospital system.

In an expanded version of IOWA MEDICINE'S Question/Answer feature, Paul M. Seebohm, M.D., executive associate dean, University of Iowa College of Medicine, responds to questions on this new proposal.

What is an AHEC?

AHEC is an acronym for "Area Health Education Center," which is a specialized type of community-based health education program.

Is this a new concept?

Not really. 75 years ago, the bulk of medical, dental, nursing and pharmacy education was in community-based schools as opposed to being in universities as it is today.

In 1900, the Carnegie Foundation for the Advancement of Teaching, prior to giving away its endowment, appointed a commission to study the quality of American colleges and universities to determine how they might best benefit from monetary awards. Early in the study it was discovered that professional schools, especially of medicine, law and theology, often gathered near colleges. They identified with the colleges in name but rarely adopted their academic standards. This discovery led to the famous 1910 Flexner Commission investigation and report on medical education. It found most medical schools deficient in premedical requirements and basic and clinical science curricula. Over the next 50 years of reform only those schools adopting the university-based Flexner scientific model survived. By the 1960's, community-based medical education had all but disappeared.

Why have AHEC's been revived?

In the late '60's, another Carnegie Commission was formed to study the "serious shortage of professional health manpower." It affirmed the success of the Flexner model in elevating the scientific level of medical education, but it described at least one weakness in modern times: "it largely ignored health care delivery outside the medical school and its own hospital." The Commission then proposed a "new" health care delivery model be developed where the medical school, in addition to training, does research in health care delivery, advises local hospitals and health authorities, works with community colleges on allied health programs, carries on continuing education for health personnel and generally orients itself to external service.

Isn't there a risk that community-based programs would develop the same problems with educational standards as they did 75 years ago?

Not really; the situation is quite different. Medical education today operates at a scientific level compatible with university standards at a

(Please turn to page 155)

high academic level. Moreover, medical practice is performed by trained physicians using the most modern of diagnostic and treatment methods. At the turn of the century the schools were poor as was the education of the physicians, so the problem of the physician inadequacy was being perpetuated by mediocre instruction.

In all fairness to our forefathers, we must recognize the tremendous development in the state of the art and science of medicine since 1900. Although there is much more to be taught, the standards of practice are quite uniform, and with modern communication, innovation and change are readily disseminated among practitioners.

Did the 1970 Carnegie Commission have any effect on American medical education?

It had considerable effect. Faced with a public conviction of a doctor crisis, federal, state and local government programs were designed to stimulate the production of more physicians, as well as other health professionals. Use was made of existing community resources in almost every state. The NIH AHEC contract program constituted one of the major efforts. Over 90 million dollars was awarded to 11 state institutions to assist in the creation and operation of Area Health Education Centers from 1972-79. The program was extended in 1978 for another 6 years when 12 city and state institutions received AHEC grants.

In addition to the federal initiative, many state programs supporting decentralized health education were created. Often these were variations on the Carnegie AHEC model. For example, Illinois developed 2 clinical year medical schools in Peoria and Rockford; Oklahoma created a similar type school in Tulsa, and Michigan State University involved several secondary centers outside of Lansing for its clinical years.

Where was Iowa when all this happened?

The University of Iowa applied to the NIH AHEC program on its first round in 1972. Although the Iowa program was approved, it was not funded. However, a number of outreach initiatives taken by the University of Iowa College of Medicine and state government were started in the early 1970's to com-



Paul M. Seebohm, M.D.

plement the core programs in Iowa City. Most significant, the statewide system for family practice residency training was authorized by the legislature, and primary care residencies in internal medicine were established at Iowa Methodist and the Des Moines V.A. Medical Centers. Along with these, student clerkship experiences with community hospitals and professionals for medical and dental students were greatly expanded. In medicine alone, 50% of the freshmen spend a summer in a Medical Education Community Orientation (MECO) program sponsored by community hospitals, 100% of juniors have a primary care clerkship, and 25% of the senior electives are taken in community-based programs. At the residency training level, Iowa has some 225 residents training in community hospitals this year compared to 40 in 1970.

It sounds as if Iowa has already achieved the goals set by the Carnegie Commission AHEC program.

In a way, it has. Iowa just has not used the AHEC logo, but its community-based programs in Sioux City, Mason City, Waterloo, Davenport, Cedar Rapids, Iowa City and Des Moines are accomplishing the redistribution of health professionals. This involves physicians specifically in a manner predicted by the authors of the Carnegie concept.

(Please turn to page 178)

The Increasing Role Of Medical Students In Organized Medicine

DOUGLAS LIND
Mason City, Iowa

Medical student involvement in the endeavors of the profession has progressed significantly in recent years. The resulting benefits appear substantial — both in the short- and long-range. A U. of I. medical student gives his perspective on what is happening.

TO A MEDICAL STUDENT, the rapidly changing environment of medicine is at once alarming and challenging. Even the most casual observer realizes the profession we will enter may be quite different from the one we have chosen. This difference has been interpreted by some as signifying the demise of a once great and sovereign profession. Indeed, the current politico-economic environment makes this view somewhat tenable. Others, however, suggest that current challenges from business, labor, third party payors and government can be synthesized into a mutually positive outcome for the medical profession and the society which it serves.

If medical students are concerned about the future of their profession, they are compelled to gain a firm understanding of the issues, allowing future contribution to society's deliberation. Organized medicine has provided both a means of education and a constructive outlet for student concerns.

Student Membership in Organized Medicine

Both the Iowa Medical Society and the American Medical Association have encouraged student membership through reduced membership fees and attractive benefits. In so doing, they have provided student members a means of identifying the issues through their respective journals and news publications. This has catalyzed further student interest in obtaining essential background information.

As the largest national medical student organization, the AMA Medical Student Section (MSS) has nearly 30,000 members. The same membership strategies that have strengthened the national organization are now being applied by many state societies. Within the Iowa Medical Society, student membership has doubled in the past year, and has the potential to reach 700 members.

Student membership in organized medicine has had a significant effect on graduate membership retention rates. A recent AMA analysis found graduating medical students much more likely to join the AMA as first-year residents if they had been AMA members during their final years in medical school. For exam-

Mr. Lind is a sophomore student at The University of Iowa College of Medicine.

ple, 59% of all 1982 graduating medical students who were AMA members became resident AMA members in 1983. By contrast, only 10.7% of the nonmember graduating medical students joined the AMA as first-year residents in 1983.

Students Provide Policy Input

Medical students have direct input into AMA policymaking through the AMA House of Delegates and as student members of AMA councils. The students recently acquired a seat on the AMA Board of Trustees. In the past, the MSS has addressed a wide variety of issues, including medical licensure, medical school curricula, financial aid for medical students, minorities in medicine, health manpower, maternity leave for house staff, child care facilities in medical centers, infant formula marketing and television violence.

Of particular interest have been public health/preventive medicine issues. For example, the MSS has consistently sought increased AMA action against tobacco. MSS resolutions were directly responsible for AMA support of strict regulation of smoking on commercial aircraft, development of AMA guidelines on smoking in hospitals, and AMA correspondence to the 100 most widely circulating newspapers and magazines in the country urging them to refuse to accept cigarette advertising.

Eight Delegates to IMS House

On the state level, students are represented in the Iowa Medical Society by eight voting members to the House of Delegates. In addition, provision has been made for a student member on each of the IMS standing committees. Much potential exists for increased student involvement through these mechanisms.

In an effort to provide more continuity in the IMS student activities at The University of Iowa, an IMS Committee on Student Affairs has been formed. This committee works as a liaison between the local medical student organization and the IMS. Current activities of the Committee on Student Affairs include a speaker series on medical economics and state legislative initiatives paralleling the IMS Legislative Contact Physician program.



Doug Lind

The Iowa Medical Foundation contributes to leadership development through a new IMS Medical Student Summer Fellowship program. One medical student is selected to spend 6 weeks with the staff at the IMS headquarters in Des Moines. The fellowship provides experience and insight into the complex issues currently being addressed by Iowa physicians.

Student participation in organized medicine can be justified on the basis of long term membership enhancement alone. Beyond this, students should be encouraged to expand current levels of participation in an effort to provide sound professional leadership for the years to come.

IMF STUDENT FELLOWSHIP

Jeffrey D. Anderson of Boone has been selected as the 1985 summer medical student intern under a program started in 1984 and sponsored by the Iowa Medical Foundation. Jeff has completed his freshman year at the University of Iowa College of Medicine. He is a graduate of Luther College in Decorah.

This IMF summer fellowship provides the medical student participant with a 6-week exposure to the activities and programs of organized medicine. The selected student observes and participates in various Iowa Medical Society programming.

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Abbott Northwestern Hospital

1984 Iowa Update On Organ Donation and Transplantation

JAMES A. SCHULAK, M.D.
DAI D. NGHIEM, M.D., and
ROBERT J. CORRY, M.D.
Iowa City

THE ROLE of transplantation in the management of patients with various end-stage organ failure syndromes is becoming continually more apparent. In the past year more than 6,000 kidney, 200 liver, 100 heart and 100 pancreas transplants were performed throughout the country.

In 1984 the Transplantation Service at The University of Iowa performed 100 organ transplants — 89 of them being kidney transplants. Seventy-six of these were of cadaver donor origin, and 13 were from living family donors. Consistent efforts to achieve optimal tissue matching and the use of the new immunosuppressant drug, cyclosporine, have yielded one-year cadaver graft survival in the 70% to 80% range for patients receiving their first graft, while live donor grafts are successful over 90% of the time. In this latter category, use of a donor-specific blood transfusion protocol has made successful transplantation possible between family members not perfectly matched with each other.

New at the University in this past year are pancreas and liver transplantation programs which function as an extension of the already existent kidney transplantation service. Moreover, extensive planning and preparation for cardiac transplantation has also progressed to the point where potential recipients are now being accepted for evaluation.

Pancreas transplantation to date has been limited to diabetic patients with end-stage renal failure who have either already undergone a successful kidney transplant or who wish to receive simultaneous kidney and pancreas grafts from the same cadaver donor. In 1984, 10 pancreas transplants were performed with another 4 having been added during the first 2 months of 1985. While it is too early to determine what the long-term outcome of these grafts will be, it is encouraging that 9 of the 14 grafts are functioning normally at this time. Approximately one-fourth of all University of Iowa kidney recipients are diabetic, suggesting that we can expect to perform approximately 25 pancreas transplants per year. Now that the difficult operative technique of whole pancreatic-duodenal transplantation has been perfected, and with development of less toxic immunosuppressive regimens, pancreas transplantation may in the near future be offered to nonuremic insulin-dependent diabetics with the goal of preventing the development of the hyperglycemia-related vascular sequelae.

Liver and Heart Considerations

In contrast to renal and pancreas transplantation where the grafts are supplemental, liver and heart transplantation consists of

The authors are surgeons with the Transplantation Service at The University of Iowa.



Figure 1. Dr. Dai D. Nghiem and Jim Kisthard, Director of Organ Procurement and Presentation, prepare a pancreas for transplantation after removal from a cadaver donor.

actual organ replacement. In both cases, a team of physicians and surgeons carefully screen potential recipients to validate the end-stage nature of their disease and to evaluate their operative risk. Just as with kidney recipients, suitable candidates are then placed on a waiting list until an appropriate organ donor is available. It has been estimated that between 10 to 15 Iowans will be candidates for either liver or heart transplantation each year.

To meet the increasing need for cadaver donor organs that is anticipated by expansion of the UI Transplantation Service, continued cooperation with the practicing physicians in the state is essential. Fortunately, such cooperation is already excellent as is indicated by the data in Table 1. In 1984, 45 patients were identified who satisfied criteria for organ donation and for whom family permission was obtained for organ removal. The majority of these donors were from hospitals other than The University of Iowa. In many instances, multiple organs were removed for either transplantation or research. The breakdown for 1984, our highest volume year to date, includes

TABLE I

1984 ORGAN DONATIONS IN THE STATE OF IOWA

City	*Haspital*	*Number af Donors*
Cedar Ropids	Mercy	2
	St. Luke's	1
Clintan	St. Joseph Mercy	1
Council Bluffs	Jennie Edmundson	1
Davenport	Mercy	2
Des Moines	Mercy	5
	Iowo Methodist Medicol Center	12
Dubuque	Findley	1
	Mercy	1
Grinnell	Grinnell Generol	1
Iowa City	The University of Iowo	10
Moquoketo	Jocksan Caunty	1
Sioux City	Marion Health Center	7



Figure 2. Dr. James Schulak and Dr. Robert Corry perform a pancreas transplant.

89 kidneys, 15 pancreases, 13 hearts and 11 livers.

Unfortunately, only a small portion of patients who die in hospital are candidates for organ donation, and this is an area where community physicians can be of immeasurable value in motivating patients and families to consider making these priceless gifts to others. Suitable donors are those who have sustained brain death and who are ventilator-dependent but who have normal physiological function of their transplantable organs and who remain hemodynamically stable. This latter criterion is especially important in potential multiple organ donors, not only because the heart, liver and pancreas are more susceptible to ischemic damage than are kidneys, but also because it takes additional time to organize multi-organ retrieval and organ placement. Irreversible brain damage may be due to various causes such as cerebral vascular accidents, subarachnoid hemorrhage of any cause, severe brain trauma, primary brain tumors and in some cases, drug overdoses. Table 2 categorizes the various causes of death for our 1984 donors.

Age Factors Are Important

Patient age is also an important factor. While kidneys may be usable from donors up to the age of 65, other organs, especially livers and hearts, are usually recovered only from patients less than 40 years of age because of the greater possibliity for atherosclerotic lesions in the older population. In the past, children under 5 years of age were often eliminated from consideration because of their small size. Our recent experience, however, has demonstrated that both pancreases and kidneys from very young donors (3 and 4 years of age) are of suitable size to maintain adult recipients. Because of the difficulty in outlining binding criteria for donor eligibility, practitioners are encouraged to contact the Transplantation Service in Iowa City (319/35ORGAN), collect, any

TABLE II

CAUSES OF BRAIN DEATH IN THE UNIVERSITY OF IOWA 1984 ORGAN DONORS

1. Broin injury		
Motor vehicle occidents	15	33%
Gunshot wounds	5	11%
2. Cerebrol vosculor occidents	14	31%
3. Other (broin tumors; drug overdose; broin onoxio due to seizures, hypoglycemio, suicide, etc.)	11	25%

time — day or night — they may have a potential donor, so an appropriate decision can be made by our organ recovery coordinators.

Besides arranging the logistics of organ recovery, assisting either community surgeons or the UI surgical team with the actual recovery operation, and maintaining the organ(s) until transplantation, the recovery coordinators also establish contact with the national computer system for organ sharing. Thus when kidneys recovered in Iowa cannot be matched with a suitable Iowa recipient they are shared with transplantation centers throughout the United States. On even rarer occasions, kidneys from Iowa have been sent abroad when no recipients could be found in this country. Such decisions are frequently based on tissue typing data that is often available — even before organ removal is begun — from the transplantation program's tissue typing laboratory at the Veterans Administration Medical Center adjoining University Hospitals. While national and worldwide organ sharing is becoming increasingly infrequent, its feasibility nevertheless demonstrates the sophistication now prevalent in organ procurement organizations throughout the world.

Summary Comment

As a result of recent developments here and at other centers, increasing success rates for renal transplants can be offered to Iowans. In addition, our long-term interest and recent perfection of the surgical technique of simultaneous renal-pancreatic transplantation provides the unique capability of curing both the insulin-dependent diabetes and the diabetes-associated renal failure with one operation. Such accomplishments are only possible through the continued assistance and commitment of our colleagues throughout the state, whose efforts are greatly appreciated.

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Figure 1. A magnetic resanance imaging unit was installed at University Haspitals in 1984. Val Dunn, M.D., assistant prafessar, Department af Radialagy, and medical caardinatar af the MR Center, aperates the unit. The imaging unit is especially useful ta evaluate and stage cancers of the prastate, bladder, avaries, uterus, vagina, spinal card and brain.

New Cancer Therapies At University Hospitals

THE NEWEST TECHNIQUES in therapy are expanding comprehensive care for cancer patients at The University of Iowa Hospitals and Clinics — the clinical arm of The University of Iowa Cancer Center.

Patients with certain types of tumors may undergo intraoperative radiotherapy (IOR), which combines surgery and radiation. In IOR, the tumor, or the area from which the tumor was excised, is exposed during surgery, and radiation is applied directly to the area to destroy any tumor remnants.

A different kind of radiation is being used for certain brain tumors. Neurosurgeons use radioactive Iodine-125 seeds to treat patients with recurrent, primary malignant brain tumors. The seeds are implanted directly into the resected tumor bed and irradiate any residual tumor from the inside, minimizing the risk to surrounding healthy brain tissue.

Bone marrow transplantation is a treatment for some forms of leukemia. Since 1980, University Hospitals' bone marrow transplantation program has performed 131 bone marrow transplants — 107 with related donors and 24 with unrelated donors.

The newest medications for chemotherapy are obtained by University Hospitals through

national cooperative study groups. In addition, University Hospitals cancer specialists offer patients a new way to receive chemotherapy. A surgically implanted infusaid pump can deliver a constant, high-dose of drug directly to the tumor.

Hematology-oncologists use interferon to treat patients with hairy cell leukemia. The same drug is used by surgical oncologists to treat patients with newly-diagnosed recurrent breast cancer.

Recent advances in laser technology are applied to cancer therapy. With the aid of fiber optics, physicians use lasers to vaporize tumors in the brain, eye, esophagus and lung. In the Clinical Laser Facility, physicians in the Cancer Center's Phototherapy Program use laser-activated hematoporphyrin derivative (HPD) to diagnose and treat gynecologic tumors; they also use HPD for some solid malignant tumors of the eye, skin, bladder, head and neck. Phototherapy kills tumor cells when light, generated by an argon-dye laser, focuses on a tumor that has absorbed the HPD.

Therapy Programs

To serve the diverse needs of cancer patients, the Iowa Cancer Center has formed 16 cancer therapy programs, each consisting of interdisciplinary staff. Members of these programs participate in 8 national cooperative study groups to develop new protocols for cancer therapy. Members also collaborate with community physicians to coordinate protocol therapies for patients who may receive part of their care at home.

The cancer therapy programs and telephone numbers for consultation are the following:

- Acute Leukemia Therapy Program, 356-1616 (beeper 180)
- Bladder Cancer Therapy Program, 356-4368
- Bone Marrow Transplantation Program, 356-3425 or 356-3330
- Brain Tumor Program, 356-3313
- Breast and Colon Cancer Therapy Program, 356-2778
- Gynecologic Oncology Program, 356-2015
- Head and Neck Cancer Therapy Program, 356-2166 or 356-3574
- Lung Cancer Therapy Program, 356-2764
- Orbital Oncology Program, 356-1616 (beeper 061)
- Prostatic Cancer Therapy Program, 356-4368



Figure 2. Patrick Hitchon, M.D., assistant professor, Division of Neurosurgery, places radioactive Iodine-125 seeds into a resected brain tumor. The seeds irradiate the tumor from the inside, minimizing risk to surrounding healthy brain tissue.



Figure 3. Postoperative X-ray shows I-125 seeds in the tumor.

- Division of Medical Hematology-Oncology, 356-2075
- Orthopaedic Tumor Therapy Program, 356-2595 (beeper 098)
- Division of Pediatric Hematology-Oncology, 356-1616 (beeper 295)
- Division of Radiation Therapy, 356-2253
- Phototherapy Program, 356-4873
- Supportive Care Program, 356-2523.

Human Dimensions In Medicine: Combatting Stress In Medical School

CAROL A. ASCHENBRENER, M.D.
Iowa City, Iowa

The newly arrived medical student is justifiably overwhelmed by the expansive surroundings. Adjustment is challenging. So, inserted into the University of Iowa medical curriculum is a freshman course intended to help neophyte students get their bearings. The evolution and nature of the course are described.

"HDM IS A GOOD PLACE to talk about what's going on in your life here. Medical school can have a drastic effect on lifestyle. It's good to have a place to talk about changes and feelings about those changes, and see if anyone else feels the same."

HDM is not the lounge at a medical fraternity, nor a new drinking establishment in Iowa City — nor is it more than occasionally an acronym for hum-drum. HDM stands for Human Dimensions in Medicine. It is a unique, one credit-hour required first semester course in the medical curriculum at The University of Iowa. It is a weekly small-group experience where students explore their own feelings and attitudes and share values with others as they make the transition to the environment of medicine.

The University of Iowa College of Medicine intends to educate future physicians who will be competent medical scientists and astute diagnosticians. The goal additionally is to produce mature, reflective individuals confident in their ability to weigh values, able to care for the whole person, to work effectively as a member of the health care team, and to adapt to an ever-changing practice milieu. Believing that physician competence relies not just on medical knowledge and technical ability but also on interpersonal skills, degree of self-knowledge, and general satisfaction in living, the College of Medicine instituted HDM 9 years ago to help medical students in their first months learn how their behavior, attitudes and concerns affect those with whom they interact.

HDM was stimulated by former Associate Dean George L. Baker, M.D., and former faculty member William Clements, Ph.D. It grew from the labors of 20 concerned students, faculty and staff who began meeting in 1976; the HDM course was first offered that fall. Initially optional, HDM received such strong

Dr. Aschenbrener is an associate dean in the College of Medicine at The University of Iowa.

support from students and participating faculty and staff that it soon became a required course.

Facilitators Are The Key

Each Human Dimensions group consists of 8 to 10 first-year students, one sophomore medical student facilitator, and one faculty or staff facilitator. Active group members rather than directive leaders, these "facilitators" serve as resource persons and, through their modelling of communications skills, assist the group in understanding its own complex interactions. Both student and faculty facilitators are recruited by a 5-member HDM planning committee that meets throughout the year to organize, modify, implement and evaluate the course.

All facilitators prepare by participating in a 2-day workshop before the fall term begins. Faculty and staff facilitators come from Medicine Administration and from many departments in the College of Medicine, including Family Practice, Obstetrics and Gynecology, Pediatrics, Internal Medicine, Pathology, Neurology, Psychiatry and Otolaryngology. Student facilitators are often identified by their own faculty HDM facilitators as possessing the requisite skills and attitudes.

HDM serves 3 general functions. First, it provides orientation to medical school, with practical information, advice and support provided to students as they adjust to their new environment. In the words of one student, "It allowed us to get together and share our anxieties and find out we all had the same fears."

HDM also creates an opportunity to share ideas and impressions, accomplishments and problems in a social environment where students are encouraged to improve their ability to communicate with sensitivity and concern. Facilitators gently guide students to improve their listening skills, to convey their observations and feelings honestly, and to experiment with new ways of self-expression. By restricting their undergraduate focus, some have missed the broad exposure to human diversity that a liberal education can afford; HDM provides a nudge toward acceptance, or at least knowledge of, a variety of life experiences and opinions.

One student put it this way, "The mix of people in our group gave me opportunity to listen to the opinions of people who are very unlike me." Another observed at the semester's end, "We were able to discuss heatedly, yet leave the room still able to smile at one another."

Address Human Values

Finally, HDM is a forum to explore personal and societal values as they relate to ethical dimensions of medicine and to the broad sociopolitical context of health care. Depending on



Pictured left to right are Steve Keller, Lee Hash, Diana Williams, Maria Ottavi and Dan Samani, medical students involved as group facilitators of HDM.

members' interest, groups discuss truth-telling in medicine, death and dying, reactions to the unappealing patient, abortion, physician impairment, the hospice movement, physician involvement in politics, the impact of DRGs on the doctor-patient relationship and/or the social responsibility of the physician. The students are challenged to leave the more comfortable cognitive domain to clarify and scrutinize their personal values as they greet those of others with tolerance and openness to change.

Student groups meet the afternoon of the first day of medical school orientation. This is a time when even the most self-confident are feeling some twinge of anxiety or doubt. The sophomore facilitator leads a tour of the medical campus, pointing out essential landmarks such as the vending machines for a fast lunch, the hospital cafeteria, first-year classroom, and the remote access terminal for fast banking.

With the general goals of HDM identified, the group meets for a casual dinner, often at the home of the faculty/staff facilitator. Thereafter, they convene for 1½ hours each Tuesday, usually with brown bag lunches in hand. Initial sessions are commonly focused on practical matters such as acclimating to the University and Iowa City communities, deciphering the hierarchy of the medical school and the structure of its curriculum, and adjusting to the realization of being surrounded by excellent students, half of whom will necessarily score in the lower fiftieth percentile on the rapidly approaching examinations.

Place To Get Information

HDM is a comfortable place to ask about the short-long white coat system in the health center, the time commitment demanded by the clinical years, and the backgrounds of other students. Many enter with some apprehension about the availability of residency positions, and are eager for facts about manpower.

After several weeks, most students discover they are not alone in having some anxiety, perhaps for the first time, about the possibility of having some academic difficulty or, at least, of being "average." Often they share study strategies for coping with stress; some begin gathering outside the group for recreation.

As the weeks go by, most groups spend time dealing with concerns about personal relationships: how to maintain an existing relationship with a significant other; how to find a significant other with so little time and energy at one's disposal; how to avoid becoming a boring "med-head" conversationalist. Many begin to explore the difficulty of combining personal and professional roles; some groups invite physician-physician and physician-nonphysician couples to a meeting to expand student awareness of the medical lifestyles.

The role of the power differential in the doctor-patient relationship inside and outside the office, and the issue of sexual propriety with patients, frequently provoke conflicting opinions. Most groups spend at least one session discussing substance abuse among physicians, often after viewing the film *My Brother's Keeper*.

Various Group Activities

Other recent group activities have included learning self-hypnosis for stress-management; inviting private practitioners to discuss their lifestyles; debating physician responsibility for social problems; conferring with other health professionals about their differing roles, and viewing videotapes on a diversity of value-related subjects. Although some students are uncomfortable with the absence of a defined content to be mastered and the lack of structure, most groups gradually assume responsibility for their own direction. Attendance is required, but there are no examinations.

Difficult though it is to determine what influence HDM has on the eventual competence of an individual student, annual course evaluations indicate an overwhelmingly positive response and a mandate to continue the course. A few say they resent the "forced friendship" but many praise HDM for the opportunity to make new friends. Frequently, sub-groups will continue to meet throughout the first year, and a number of friendships formed in HDM are maintained throughout medical school. In recent years, both student and faculty/staff facilitators have unanimously indicated they would recommend the experience to a peer. Frustrations expressed by first-year students that group members were "too cerebral" or insensitive or intolerant of diverse opinions underscore the continued need for such an experience.

Summed up one sophomore facilitator: "Medical school is neither exciting nor particularly conducive to growth. HDM can be. That's a good recommendation."

Recent Highlights

U. OF I. COLLEGE OF MEDICINE

TWO IOWA DEPARTMENT HEADS will lead prestigious specialty societies next year: **Reginald R. Cooper,** Orthopedic Surgery, is president-elect of the American Academy of Orthopaedic Surgeons, whose 12,500 members comprise the largest orthopedic organization in the world; **Francois M. (Frank) Abboud,** Internal Medicine, is president-elect of the 1,500-member Central Society for Clinical Research.

CHARLES HELMS, Internal Medicine, is one of 6 educators from throughout the country chosen to be Robert Wood Johnson Policy Fellows. He will spend the 1985-86 academic year in Washington, working in a variety of Congressional, White House and health agency assignments. When he returns to the Iowa faculty, he will be available to professional and governmental bodies to help in formulating health policy.

A NEW RESEARCH CENTER that will serve as a magnet to attract and hold top-flight scientists is being planned for construction at the northwest corner of the UI Medical Laboratories building. **Dean John W. Eckstein** told the State Board of Regents that the $26.5 million facility "will keep Iowa in the vanguard of new knowledge in molecular biology, immunology and genetic engineering — areas of research in which we have achieved great recognition and which are basic to all fields of biology." No state tax funds or student fees will be used in constructing the 5-story laboratory building, to be paid for from gifts and grant income.

*AT A GLANCE: Two members of the Iowa medical faculty — **Arthur A. Spector,** biochemistry, and **Richard D. Remington,** preventive medicine — were on the 14-member NIH panel that recently urged lowering blood cholesterol through diet changes . . . 5 members of the internal medicine faculty have been elected to membership in the Central Society for Clinical Research: **Robert Clark, Jeffrey Field, Gordon Ginder, Victoria Lim** and **Michael Shasby** . . . a new standby diesel-powered 350-KW generator will keep equipment running and maintain critical temperatures for anatomists, biochemists, microbiologists, physiologists and pharmacologists whose laboratories are in the Bowen Science Building and whose household freezers have been called upon to rescue experiments on various occasions — usually in the middle of the night. . . .*

PAUL ESLINGER, Neurology, and colleagues have developed a test battery with an 89% accuracy record in determining the presence and extent of mental decline associated with such conditions as Alzheimer's disease. Available for a one-time materials cost of about $40, and intended for use at the community level by physicians and other health and social service professionals, the screening test battery does not confirm the existence of brain disease but indicates whether the person should be referred to a regional medical center for further evaluation.

MARK WOLRAICH, Pediatrics, is the principal author of a new book, "YOUR CHILD'S EDUCATION: A School Guide for Parents." Wolraich's book aims to provide parents with the information needed to determine the appropriateness and quality of their child's educational program. The book covers school organization and personnel, curriculum, parent-teacher conferences and special services. It also includes assessment procedures for evaluating the child with school problems or special needs, and it provides details on a variety of learning, behavioral and medical problems.

This information has been compiled by the University of Iowa Health News Service.

Out-of-Hospital Cardiac Care Improves Greatly in Iowa

KENNETH R. STULTS, B.S., PA-C
Iowa City

Iowa has come from the EMS backwaters into the forefront nationally in the provision of quality emergency care. Credit for this is given to many physicians, PAs, nurses, paramedics, EMTs and other Iowans for the substantial progress in the past decade.

In the late 1970s a nationally known expert in emergency medical services (EMS) ranked Iowa and three or four other states near the bottom in developing effective EMS systems. By the mid-1980s, Iowa is acknowledged to be in the forefront of EMS systems development.

What has happened in seven years to improve so dramatically the quality of emergency care available to Iowans — and, as a result, to catapult the state from the EMS backwaters?

The Iowa Advanced Emergency Medical Care Act enacted in 1978 made it possible to train and equip non-physician "paramedics" to care for cardiac arrest outside the hospital in much the same way they could be cared for inside the hospital — and an average of 15 minutes sooner than such care could begin if the patient had first to be taken to the hospital. This 15 minutes has proved, in many cases, to be the difference between life and death.

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Iowa paramedics are required to complete approximately 700 hours of classroom, clinical and advanced field training beyond their basic ambulance training. Because of the facilities and manpower required to conduct such a program, only the larger medical centers and centralized training institutions can offer it. The problem this poses for Iowa, and most other states, is that more than half of our citizens live in communities 30,000 or smaller. With rare exceptions, these communities are too small to support fully advanced paramedic services, and, as a result, have been considered too small to share in recent advances demonstrated in other settings to improve dramatically the odds for survival following out-of-hospital cardiac arrests.

EMT-D Study

Between July, 1981 and June, 1983, medical directors and emergency medical technicians (EMTs) of 30 rural Iowa ambulance services took part in a unique, controlled study to determine whether early defibrillation alone, without benefit of endotracheal intubation and cardiac drugs, could improve survival following cardiac arrest in their communities. A 16-hour training program was conducted for EMTs within each community, usually over a weekend.

In 18 of the 30 communities, the EMTs were trained to attach a cardiac monitor to a patient, interpret a short list of life-threatening arrhyth-

mias, and defibrillate patients found to be in ventricular fibrillation. The remaining 12 communities served as controls, with EMTs attaching cardiac monitors and recording patients' heart rhythms, but otherwise providing standard care: CPR and emergency transport to the hospital.

In the 18 communities with defibrillation-trained EMTs (EMT-Ds), 12 of 64 (19%) patients found in ventricular fibrillation were successfully resuscitated and discharged home from the hospital. In the 12 control communities, only one of 31 (3%) patients found in ventricular fibrillation survived to hospital discharge ($p < .05$).[1] No EMT, and no patient in an organized rhythm, was inadvertently shocked.

Thus it was clearly demonstrated that monitoring and defibrillation of cardiac arrest victims is feasible, safe and effective in the hands of minimally trained EMTs working under protocol in small communities.

Statewide Community Participation

The Iowa EMT-D study laid the groundwork for statewide community participation in an ongoing cooperative effort to improve emergency medical services throughout Iowa. No other state now has such a broad-based network of community EMS systems dedicated to this objective — a network that today includes physician medical directors, hospital and EMS administrators, and more than 1,500 EMTs at all levels of certification. In less than 2 years, the number of ambulance services whose staffs are trained and certified to interpret cardiac rhythms and defibrillate outside the hospital has grown from 18 to 50 — and the number is still growing.

Automatic Defibrillation Study

In another project, a fully automated defibrillator is being evaluated in 18 additional communities with populations ranging from 1,200 to 35,000. Use of this equipment can be taught in 3 to 4 hours — and it is so simple to operate that the mandatory retraining periodically required for EMTs to maintain and renew skills on manual defibrillators has not been necessary. Another advantage is that the automatic defibrillator often recognizes ventricular fibrillation and delivers a shock to the patient more quickly than can most humans. In other settings, we have observed that resuscitation success improves as the time from EMT arrival to delivery of the first shock is shortened.

The current Iowa study is one of only 2 controlled clinical trials currently being conducted in the United States. Resuscitation rates and patient outcomes are being compared in 2 groups of communities: 18 with EMTs using the HeartAid automatic defibrillator, and 18 where manual defibrillators are in use. If patient outcome in both groups is equivalent, as expected, automatic defibrillation will be considered a viable option for EMS personnel everywhere — and especially for those in small communities where the limited number of patients makes it difficult to maintain skills without periodic practice on simulated cardiac arrest patients.

Other Studies

A variety of other studies involving prehospital cardiac arrest management are either currently under way or in the planning stages in Iowa communities. These include:

- A long-term, 50-community assessment of the efficacy of countershock in asystole, now in its second year.
- An evaluation of dual-purpose, self-adhesive monitor/defibrillation pads as replacements for both standard 3-electrode chest monitoring and defibrillation paddles, just past its half-way point in Des Moines.
- A comprehensive evaluation of all identifiable variables that determine outcome following prehospital cardiac arrest, in cooperation with the Des Moines Fire Department Paramedic Service. One objective of this study is to improve paramedic performance in specifically identified areas and document a subsequent improvement in survival.
- A study currently in planning, involving a defibrillator modified to recognize high resistance to the flow of current through the chest *prior to* defibrillation, and adjust the current accordingly. It is already known that when this is done in the hospital, the conversion rate from ventricular fibrillation improves.[3] On the other hand, it is desirable to keep the energy level low when resistance is normal or low, to reduce the possibility of damage to the

myocardium by the higher energy shock.[4] It is hoped that results similar to those observed in the hospital can be achieved outside the hospital.

Other states look to Iowa today as a model of what emergency medical services can accomplish. For this the credit must go to the unprecedented commitment and cooperation of many hundreds of physicians, PAs, nurses, paramedics, EMTs, state and local officials, and interested citizens who have responded to the challenge of this particular frontier: developing feasible, safe and effective approaches to out-of-hospital emergency cardiac care.

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Dr. A. E. Cram, Director . 356-
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then 338-
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Dr. A. E. Cram, Director . 356-
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Dr. R. J. Hegeman 356-
Dr. R. L. Madsen 356-
Dr. L. K. Rames 356-
Dr. B. J. Ringenberg . . . 356-
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Dr. D. D. Nghiem 356-
Dr. J. A. Schulak 356-
Gestrointestinel Surgery
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Dr. A. S. Al-Jurf, Hyperalimentation 356-
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Dr. M. T. Dayton 338-
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PATIENT REFERRAL GUIDE

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Out of State: 1-800-553-6292 (toll-free)

Emergency Referrals and Physician Consultation

For notification of an impending emergency patient arrival at University Hospitals or to request a professional specialty consultation on an emergency patient, please call:

Within Iowa: 1-800-272-6440 (toll-free)
Out of State: 1-800-553-6292 (toll-free)

Financial Arrangements

The University of Iowa Hospitals and Clinics and its clinical staff are organized to provide a single standard of care to all patients, regardless of a patient's financial status. Based upon consideration of the recommendation of the referring physician or dentist, patients are assessed full or partial fees per the following guidelines:

1. *Paying Patients.* Patients in this category are responsible for payment of all hospital charges. Most patients in this category participate in some form of private or governmental health insurance program and should plan to present their insurance enrollment identification when they register for a clinic visit or admission. In addition to hospital charges patients are responsible for paying professional fees in accord with arrangements made between the patient and the attending staff physicians and dentists.

Patients of limited financial means (those who do not pay full professional fees to community physicians and dentists) may be referred with a recommendation from the referring physician or dentist that the University Hospitals clinical staff physician or dentist waive all or a portion of professional fees beyond the patient's insurance coverage.

2. *State and County Supported Patients.* Residents of Iowa may be referred for care in these categories after county authorities have issued a certification authorizing complete hospital and professional care, beyond insurance coverage, at state or county expense. Requests for care under these designations should be directed to the director of social welfare in the patient's home county.

Poison Control Center

Rapid and accurate information for poisoning emergencies is available 24 hours per day by telephoning 1-800-272-6477 (toll-free) or in the Iowa City-Coralville area by dialing 319-356-2922.

Neonatal Transport Service

Physicians or hospitals referring critically ill infants may arrange for transportation through the Pediatrics Department by telephoning 319-356-1616. Neonatal consultations may be obtained by telephoning 319-356-1635.

Mobile Critical Care Unit

Critically ill or injured patients, including infants, may be transferred in an environment duplicating the conditions within hospital intensive care units.

Within Iowa: 1-800-272-6440 (toll-free)
Out of State: 1-800-553-6292 (toll-free)

Written Appointment Requests

The University Hospitals supplies copies of a Universal Patient Referral Form to community physician offices for convenience in securing clinic appointments by mail. Written requests for patient appointments should be addressed to the Director, Admissions Department, The University of Iowa Hospitals and Clinics, Iowa City, Iowa 52242.

Telephone Appointment Requests

(Monday-Friday 8:00 A.M.-5:00 P.M.) Patient admissions or clinic appointments may be expeditiously completed by direct-dialing the clinical services appointment scheduling centers listed below. If for any reason you wish to contact a particular staff physician or dentist directly, the appropriate telephone number may be located on the opposite page. **Night and weekend requests for urgent patient appointments may be directed to the Emergency Admissions Unit at telephone number 319-356-2683.**

Clinical Data on Referred Patients

Clinical laboratory results, X-rays, EKG tracings and other clinical findings which would be of value in our care of your patient should be sent with the patient when he/she comes to University Hospitals for an appointment or admission.

Histopathology tissue slides should be sent to the Department of Pathology along with a copy of the referring pathologist's report. Also indicate the clinical service or staff physician to whom the patient has been referred and whether or not the slides may be permanently retained. Telephone inquiries may be directed to the Department of Pathology at 319-356-2906.

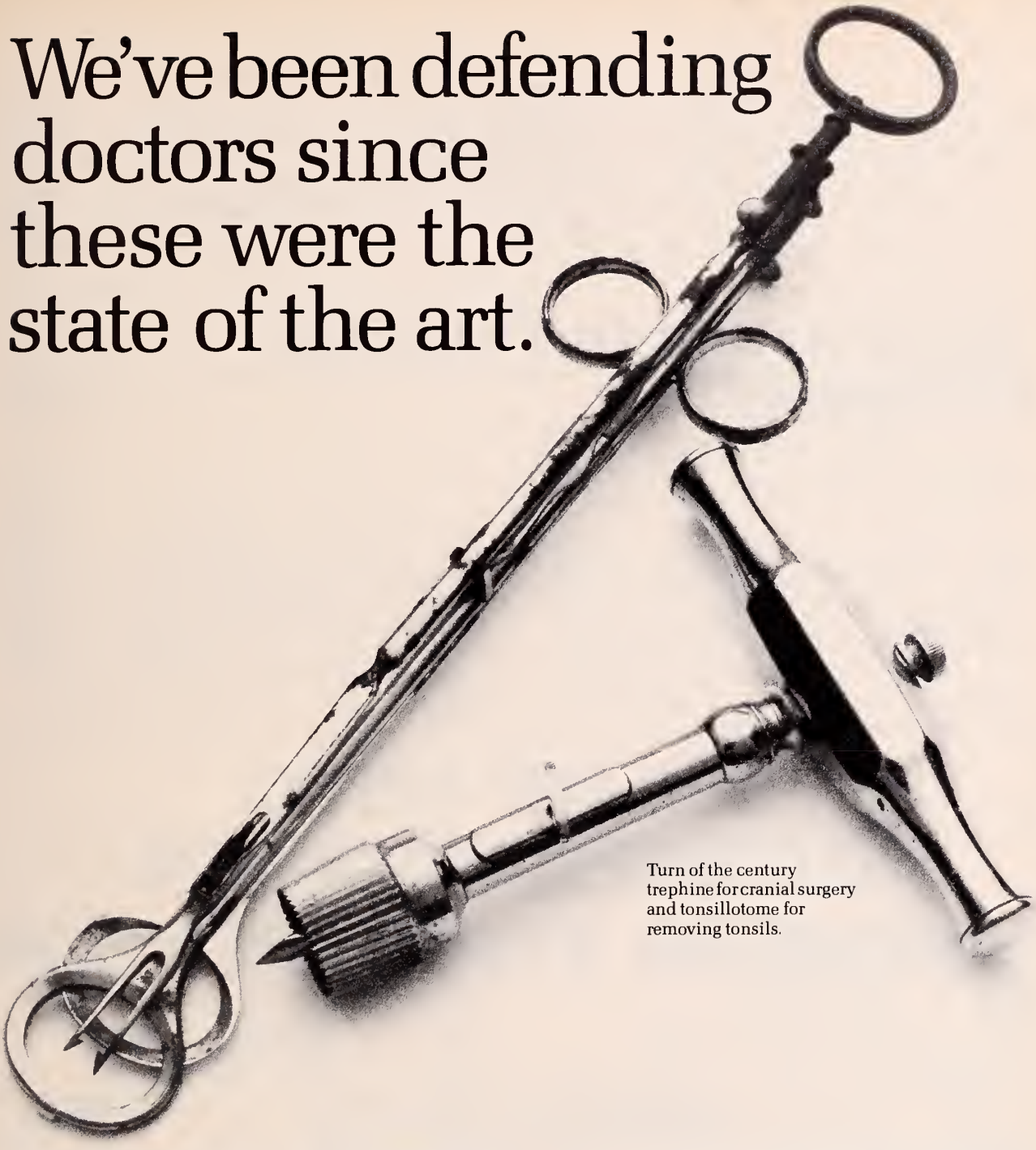
Clinical Service Appointment Scheduling (Area Code 319)

Dentistry (Oral Surgery)	356-2205
Dermatology	356-2274
Internal Medicine (and all Medical Subspecialties)	
Outpatient	356-2927
Inpatient	356-3408
Neurology	356-2571
Obstetrics & Gynecology	356-2294
Ophthalmology	356-2852
Orthopaedics	356-2223
Otolaryngology— Head & Neck Surgery	356-2201
Pediatrics	356-2229
Psychiatry	
Adult	353-5422
Child	353-4980
Radiology	
Diagnostic	356-3350
Nuclear	356-1911
Radiation Therapy	356-2253
Surgery	
General	356-2902
Neurosurgery	356-2237
Thoracic and Cardiovascular	356-2271
Urology	356-2421

(For numbers not otherwise listed, dial 356-1616, area code 319)

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Appreciation to Physician Preceptors

THE UNIVERSITY OF IOWA COLLEGE of Medicine extends sincere appreciation to the Iowa physicians who serve in the Family Practice Preceptorship Program. Following is a list of *all* physicians who serve as preceptors for third- and fourth-year medical students. Also listed are physicians who served as preceptors to students in the Physician Assistant Program during 1983-84. The preceptorships are an important element in the College's outreach effort, as students observe first-hand a medical practice away from the academic setting.

MEDICAL STUDENT PRECEPTORS

Algono . . . . . Jay D. Mixdarf, Kenton Moss
Anomosa . . . . . Geaffrey Miller
Ankeny . . . . . Rodney R. Corlsan
Atlontic . . . . . Kenneth Burkhort, Thamas J. Payne, Jerry L. Wille
Belle Plaine . . . . . Clorence E. Douglos
Belmand . . . . . Albert J. Kollosch
Burlingtan . . . . . Jo Ellen Hoth, A. Patrick Schneider II
Baone . . . . . John F. Murphy, Wayne E. Rause
Carrall . . . . . Homer Skinner
Cedar Falls . . . . . Robert N. Bremner, Philip E. Rohrbaugh, Jomes R. Young
Cedar Rapids . . . . . Joon Ryder Benz, Donold Hilliord, Jahn P. Jacobs, Jomes F. Stiles, Robert L. Swaney, Mark J. Tyler
Centerville . . . . . Jomes B. McConville, Melvin G. Parks
Cherokee . . . . . Gene E. Michel
Clarinda . . . . . G. William Richardsan
Clintan . . . . . Michoel A. Dehner, Geargе L. York
Conrod . . . . . Dohn R. Kruschwitz, Glendon D. Button
Corydan . . . . . Keith A. Garber, Douglos W. Hoch
Crestan . . . . . Lorry W. Goetz, Peter R. Morcellus
Davenpart . . . . . Morilyn Ann Lensing, Marvin F. Ohsonn
Decarah . . . . . Jomes A. Bullord, Drew Pellett, Mox Quaas
Denisan . . . . . R. L. Bendixen, Donald J. Soll
Des Maines . . . . . Kelly S. Bast, James R. Bell, Chorles R. Peterson, Ranald A. Shirk, David Swieskowski
West Des Maines . . . . Roy W. Overtan
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Eagle Grave . . . . . Dole A. Harding
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Monilla . . . . . John M. Hennessey
Moquoketa . . . . . Jahn A. Braman, Clifford L. Rosk
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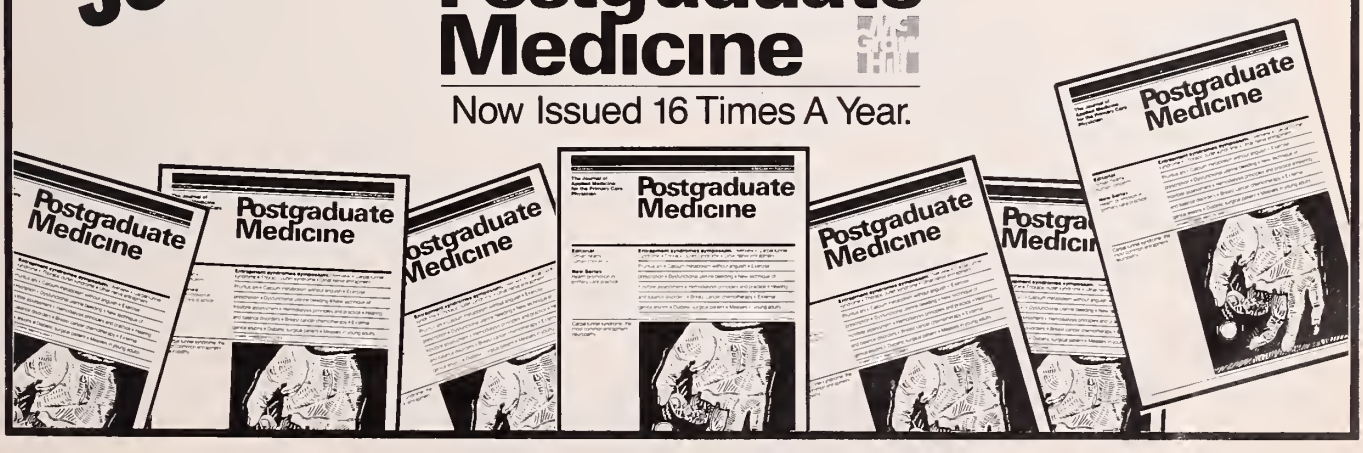
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Announcing . . .

Alcoholism/Chemical Dependency Fellowship Program
May 3, 1985

A day-long continuing education program in Alcoholism and Chemical Dependency for primary care physicians will be held at the Holling Education Center, Immanuel Medical Center in Omaha on May 3, 1985. This program is designed to enhance physicians' understanding of the diagnosis, treatment and follow-up of chemically dependent patients. Continuing Medical Education (CME) credits are offered for participation in the program.

For participants requiring overnight accommodations, lodging is available at the beautiful new Immanuel Plaza Motel on the Medical Center campus. Spouses are also welcome to accompany physicians attending the Fellowship and to enjoy a day of shopping and sightseeing in Omaha.

An agenda of the program is as follows:

7:30- 8:10 a.m.	Breakfast	
8:10- 8:15 a.m.	Welcome/Introduction	John J. Hoesing, M.D.
8:15- 9:00 a.m.	Diagnosis of Alcoholism/Chemical Dependency	John J. Hoesing, M.D. Richard K. Dyer, M.D. Pam Garrett, M.A., A.P.A.C.
9:00-10:00 a.m.	Intervention Process	James Mays, M.P.A., P.A.C.
10:15-11:15 a.m.	Detoxification	William A. Shiffermiller, M.D.
11:15-12:30 p.m.	Treatment Modalities	Christopher Eiel, M.A., P.A.C.
1:00- 2:20 p.m.	Immanuel Medical Center ATC Treatment Process	Christopher Eiel, M.A., P.A.C. Terrence R. Finney, M.A., S.P.A.C. (Chaplain — to be announced)
2:30- 4:00 p.m.	Aftercare	John J. Hoesing, M.D. Richard K. Dyer, M.D. Deborah Umberger, B.S., A.P.A.C. James Mays, M.P.A., P.A.C. AA Member
4:00- 4:20 p.m.	Prevention	John J. Hoesing, M.D.

For more information on this or future Fellowships, contact **Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122,** (402) 572-2340.

Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



AN IOWA MEDICINE TRADITION

In keeping with a tradition of several years the April issue of IOWA MEDICINE is dedicated to the University of Iowa College of Medicine. We feel certain that our publication stimulates the faculty to submit manuscripts. In turn, we value our position as a medium of providing the physicians of Iowa a liaison with the College of Medicine. We serve all the physicians of Iowa; the College of Medicine does likewise.

Our gratitude is extended to the academia for authoring excellent reports for publication. We regret that we must reject some manuscripts inasmuch as we cannot publish all. We are proud to have an abundance of materials.

We continue to enjoy our relationship with the faculty at the College of Medicine and hopefully can continue to publish the university issue for the benefit of all Iowa physicians. — M.E.A.

ENTHUSIASM!

Spring is a great season of the year. There is a renewal of life, and with that renewal a new surge of enthusiasm bursts forth. That enthusiasm may be centered upon one's home and garden, recreation, such as golf and fishing, or how one strives for rewards in life's endeavors. Enthusiasm, dedication to purpose, and hard work can provide rewards. Prosperity may be great, but enthusiasm and dedication can make adversity an even greater challenge because we can overcome it.

Living in the past or in the future is unrealistic. It is a mental way of living, while our life today is reality. One should not be burdened with regrets or bitterness over the past, nor should we dream too much of the future. That is not to say we should not profit by the past nor plan for the future. We must realize the values of today without dwelling on the past or the future.

To make a good living is not necessarily a good life. But, to lack enthusiasm for the present is emptiness. The terminally ill person is admonished to "get his house in order." What were his plans for the future? Perhaps he had planned to retire, to travel, to start a new hobby, or to renew old friendships.

Often the sad error of life is emphasizing plans for the future and being unmindful of the present. Dale Carnegie said it well, "One of the most tragic things I know about human nature is that all of us tend to put off living. We are all dreaming of some magical rose garden over the horizon instead of enjoying the roses that are blooming outside our window today."

We must face each day with an enthusiasm equal to those days of the past and our hopes for the future. Of course, this does not mean we should abandon ourselves to excess. We should plan prudently for tomorrow, for today is the day you looked forward to yesterday. Enter each new day with an enthusiasm for life that will make the yesterdays and tomorrows only a matter of the past and the future, rather than an obsession of what should have been or will have to be. The zest of today can dampen the apathy that life's trials may bring. Enter the newness of the seasons with an enthusiasm for your professional worth, as well as your personal and family life. I, too, hope I can follow these admonitions and stop to smell the roses along the path of life, though tortuous it may be at times. — M.E.A.

Historical Vignettes

LOOKING BACK

In commemoration of our 75th anniversary, we salute the past. This is being done in cooperation with and in recognition of the interest of the IMS Historical Committee. Appropriately we have titled these brief historical comments Looking Back.

THE ETHICS OF PRACTICE*

THE PHYSICIAN is the most sensitive of men. No calling stimulates more sharply a love of praise. No one is more indignant than the physician under the faintest breath of criticism. And no wonder, ungenerous criticism of his acts may cause sorrow unutterable. The essence of law is strife: the essence of medicine is generosity. One can carry charity into magnanimity: with charity he can heap coals of fire; he can turn a bitter enemy into a lasting friend. . . . Medical colleges have been turning out hosts of embryo doctors with lots of theory, deflated purses, and absolutely no business training. Medicine is not a business, but there is no reason why it should not be carried along on business principles. We have the mental labor of lawyers, the moral standing of the ministry, the technical knowledge of skilled artisans, and the business qualifications of school children. The average man will gladly pay a lawyer $500 to be kept out of the penitentiary for a few years, will willingly give a real estate agent $200 to sell his little farm, while he would never stop kicking and complaining if a doctor charged him $100 for keeping him out of hell for the rest of his life. — **C. A. Boice, M.D.,** Washington, Iowa, *The Ethics of Practice.* JOURNAL OF THE IOWA STATE MEDICAL SOCIETY 1911; Vol 1:117-123.

* Read before Wapello County Medical Society, May 1911.

HIGHER PRIORITIES THAN AHEC

(Continued from page 155)

Then why do we need a new AHEC program in 1985 when the number of health professionals is plentiful, and specialty and geographic maldistribution is being corrected?

In my view, the 1970 Carnegie Commission initiative served its purpose well in the 1970's, but is not applicable to the problems of health care in Iowa in the 1980's. To succeed, AHECs need the hospitals and professionals that are found only in secondary health centers. In Iowa, as well as nationally, health education in these communities is currently well developed. The principal problem in Iowa today is the economic health of the small hospital (100 beds or less) in the small rural community. The educational system is now geared to put physicians and dentists into these communities, but the health economic system is programmed to put these hospitals out of business. It is axiomatic that if Iowa loses its rural county seat hospitals, the educational efforts to attract physicians to rural Iowa will be for naught.

Right now, the urban-rural differential for DRG reimbursement under the Medicare system, stringent utilization review by the PRO, and lack of capitalization to modernize and diversify are by far more important in affecting the future health of our rural hospitals than is any lack of Iowa community-based health education programs.

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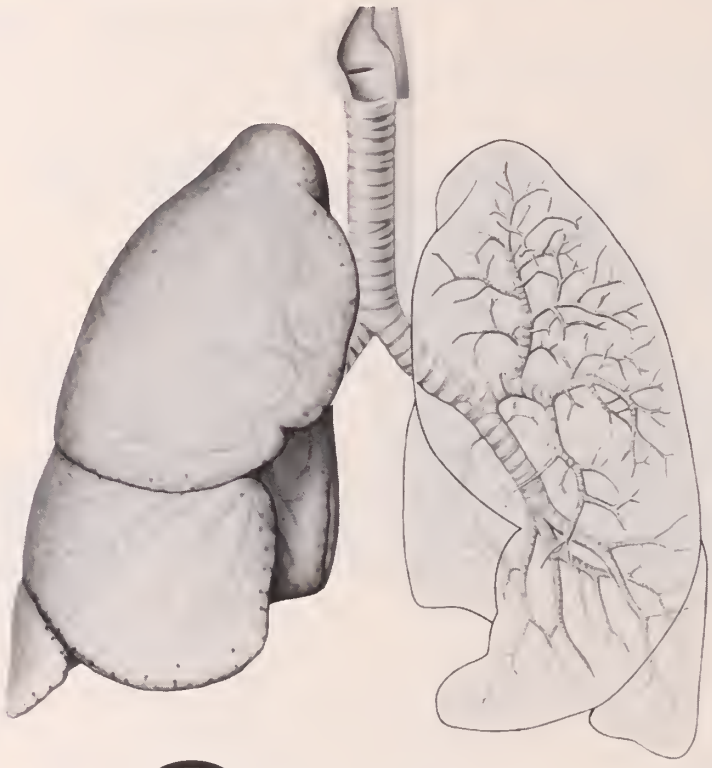
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Brief Summary Consult the package literature for prescribing information

Indications and Usage Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae)*, *Haemophilus influenzae* and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions *General Precautions* — If an allergic reaction to Ceclor* (cefaclor, Lilly) occurs, the drug should be discontinued and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy — Pregnancy Category B — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor* (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[0617B2R]

Note Ceclor* (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

TREATMENT OF VASCULAR HEADACHES IN CHILDREN

VASCULAR HEADACHES represent one of the more common episodic neurologic disorders of childhood. Since cluster headaches are exceptionally uncommon in children, the term vascular headache in this patient population is synonymous with migraine or its variants. The incidence of migraine in children has been estimated at between 2 and 5%.[1] Approximately 20% of all patients with migraine have their headaches begin before 10 years of age, and nearly 20% of children with migraine have episodic headaches before age 5 years.

Childhood migraine differs from its adult counterpart in several clinically important respects. First, classic migraine (unilateral headaches with visual aura) is relatively infrequent among children and rarely occurs prior to age 10 years. In addition, children with migraine have an increased risk for seizure disorders, and between 20 and 60% of children with migraine have abnormal electroencephalograms. Finally, childhood migraine has several well-characterized variants, including ophthalmoplegic migraine, abdominal migraine, the Alice-in-Wonderland syndrome, acute confusional migraine, cyclic vomiting, and paroxysmal vertigo.[2]

The diagnosis of migraine relies heavily on the clinical history, and with the exception of electroencephalography, neurodiagnostic tests have little value. Clinical criteria for migraine, as outlined by Prensky *et al*,[3] include recurrent headache and any 3 of the following: unilateral pain, aura, nausea or vomiting, throbbing headache, relief with rest, or family history of migraine. Children with migraine also have a high incidence of motion sickness, a historical feature which many consider a minor criterion for the diagnosis of migraine.

In general, the therapeutic approach to childhood migraine, as in adult migraine, focuses on 2 issues: treatment of the acute migraine attack and prevention of recurrences.

DRUGS USEFUL FOR ACUTE MIGRAINE HEADACHES

Analgesics

Although few, if any, controlled studies have investigated their use in childhood migraine, aspirin or acetaminophen have some value as an initial drug for acute migraine headache.[1, 3, 4] Given in standard analgesic doses, aspirin or acetaminophen may be effective in some children. In a study of 55 children with migraine, Holguin and Fenichel reported that 3 children (6%) responded well to aspirin alone.[3] The effectiveness of aspirin or acetaminophen in acute migraine headache relates directly to the drug's analgesic properties; however, aspirin's effects on platelets and serotonin release may be contributory. The most troublesome side effects of aspirin therapy in children include nausea and vomiting, hypersensitivity reactions, and the potential for acute ingestion of toxic quantities. In addition, aspirin may have some role in the occurrence of Reye's syndrome after childhood viral

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

infections. Although the adverse effects of acetaminophen are relatively minor, overdoses can cause serious hepatotoxicity.

Sedatives

As is the case with analgesics, sedatives have been widely used to treat childhood migraine despite the lack of controlled studies supporting their efficacy. Several authors recommend a combination of mild analgesic and sedative medications in children with infrequent migraine attacks (fewer than 1 headache per month).[1, 3] Sodium pentobarbital, promethazine hydrochloride, and a combination product containing aspirin, caffeine, and butalbital (Fiorinal®) have been among the sedatives used to treat acute migraine in the pediatric population. Barbiturate-containing medications have several potentially serious adverse effects, including abuse potential, and should probably be used sparingly. Fiorinal® has not been approved by the FDA for use in children under 12 years of age. Promethazine hydrochloride, available in oral or suppository forms, has both sedative and antiemetic properties and thus treats the nausea and vomiting which typically accompany migraine headaches. Children receiving promethazine can experience blurred vision, dry mouth, nightmares, and paradoxical excitability.

Ergotamine

Ergotamine preparations are among the most commonly used medications for acute migraine headaches in both adults and children.[4] These medications have neither sedative nor analgesic effects, but act by a direct vasoconstrictive effect on cerebral blood vessels. Ergotamine also has antiserotonergic properties. Ergotamine will relieve acute migraine headache in nearly 90% of patients, and in 1 uncontrolled study in school-aged children only 4 of 44 children failed to respond to therapy with an ergotamine tartrate and caffeine-containing preparation.[5] To be effective, ergotamine should be given as soon as possible after the onset of symptoms. The most widely used ergotamine, ergotamine tartrate, is available alone or in combination with either caffeine or a barbiturate. Combination preparations probably have no proven advantages over the single drug formulation. Ergotamines are available in oral, sublingual and suppository forms, and as an injectable preparation, dihydroergotamine mesylate. Use of ergotamine tartrate in the pediatric population is generally restricted to children over 10 years of age or to the occasional younger child who has a well-recognized migraine aura. Adverse effects include precordial and muscle pain, nausea and vomiting, tachycardia or bradycardia, and peripheral paresthesias. Hypertension and liver or renal disease are contraindications to the use of ergotamine.

Isometheptene

This sympathomimetic amine, used to treat adults with migraine, alleviates migraine attacks by constricting dilated cerebral blood vessels. The available preparations (e.g. Midrin™) combine isometheptene with acetaminophen and dichoralphenazone, a mild sedative. This medication has not been approved by the FDA for use in young children but has possible value for teenagers with migraine. Potential side effects include hypersensitivity skin rash and transient dizziness. The drug is contraindicated in patients with glaucoma; hypertension; heart, renal, or liver disease; and in patients taking monoamine-oxidase inhibitors.

DRUGS FOR PREVENTION OF RECURRENT HEADACHES

Anticonvulsants

Unlike adults with vascular headaches, children with recurrent migraine often improve when treated with the anticonvulsants phenytoin and phenobarbital.[6, 7] The mechanism by which anticonvulsants reduce the frequency and severity of migraine attacks is not known, and the effectiveness does not seem to be related to the electroencephalographic findings.[6] In 1 uncontrolled study, 77% of children with recurrent migraine improved when treated with phenytoin.[6] A similar study reported that more than 90% of children experienced a greater than 75% reduction in the severity or duration of migraine while receiving either phenytoin or phenobarbital.[7] Seventy percent of these children had complete resolution of their headaches. Phenytoin and phenobarbital should be given in standard anticonvulsant doses, and serum levels should be monitored every 3 to 4 months. Adverse effects of phenytoin include hypersensitivity rash, hirsutism,

(Please turn to page 183)

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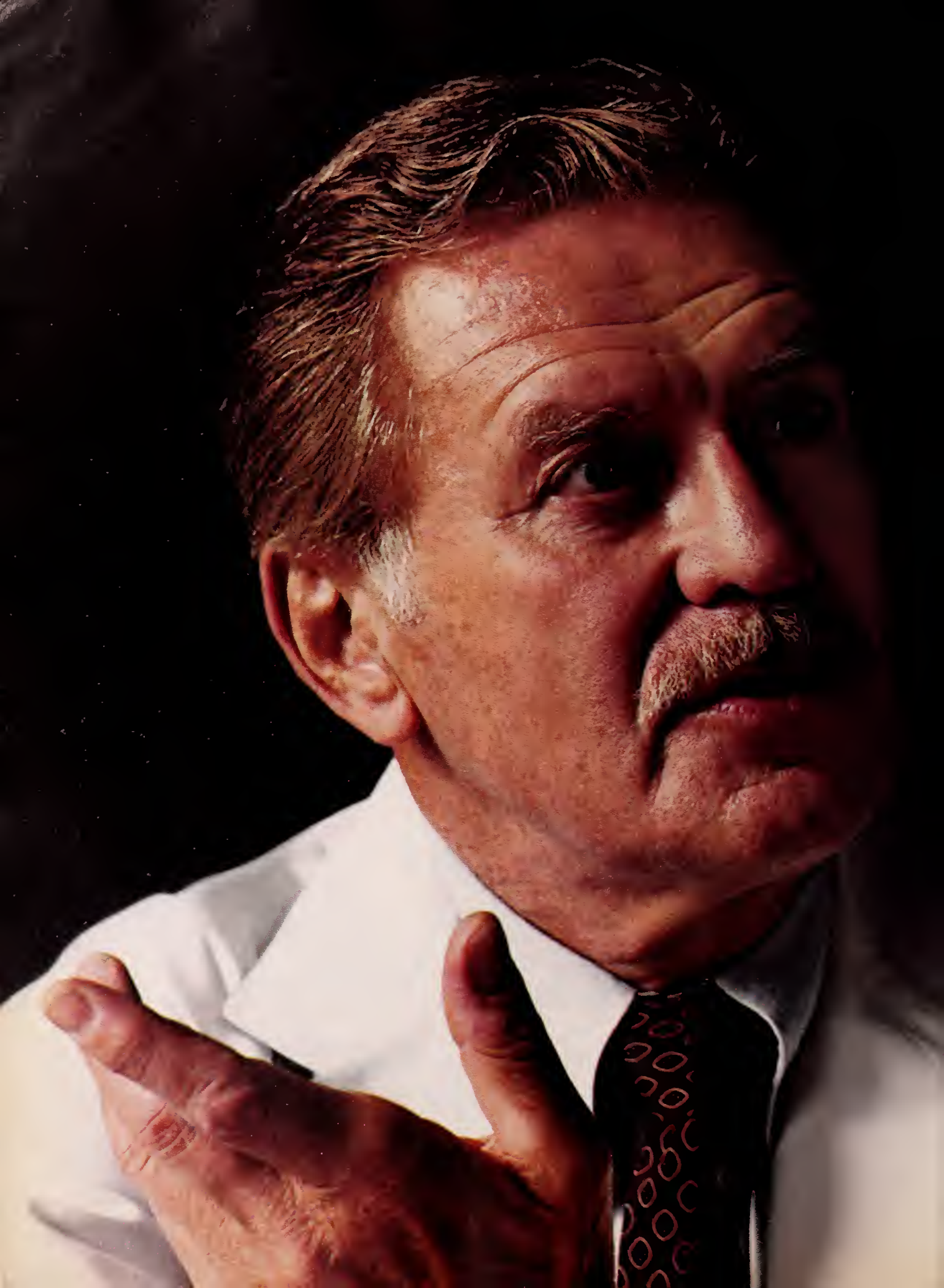
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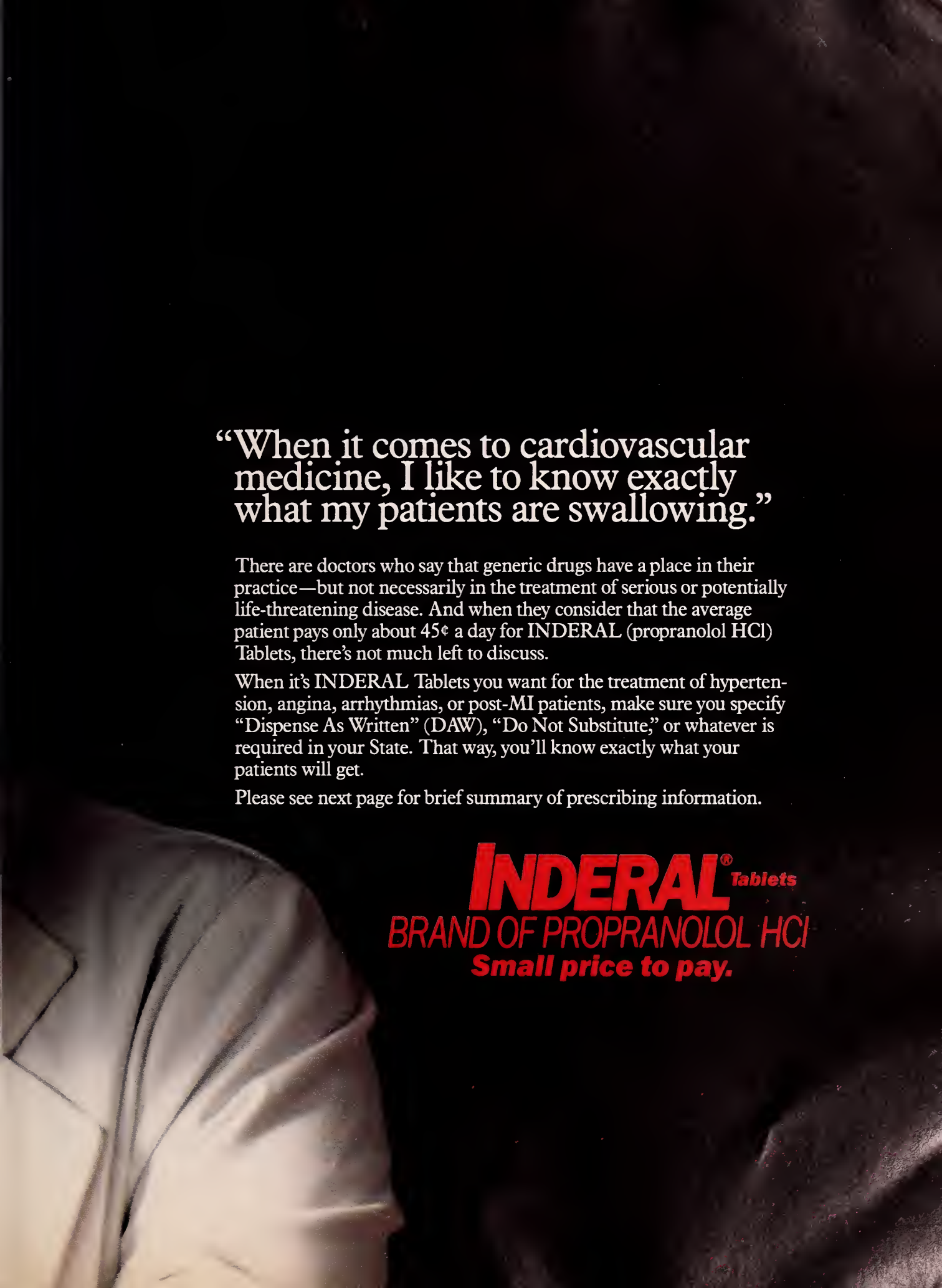
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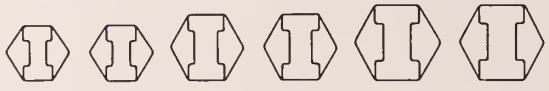



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BRIEF SUMMARY (FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)

INDERAL® (propranolol hydrochloride) Tablets

CONTRAINDICATIONS

INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS

CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL, like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS

General. Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL is not indicated for the treatment of hypertensive emergencies.

Beta-adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL (propranolol hydrochloride) may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy. Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia, congestive heart failure; intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: Lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

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TABLE 1
DRUGS FOR ACUTE MIGRAINE THERAPY

Drug	Dose	Cost[1]
Aspirin	10 mg/kg/dose	$0.003/325 mg
Acetominophen	10 mg/kg/dose	$0.003/325 mg
Ergotomine tortrote	1 mg (stort) 3 to 5 mg/ottock (maximum) 5 to 10 mg/week (maximum)	$0.21 to $0.25/dose
Promethazine hydrochloride	6.25 to 25 mg/dose	$0.07/12.5 mg
Sadium pentoborbitol (suppository)	30 to 60 mg/dose 60 to 120 mg/doy (moximum)	$0.56/60 mg
Butolbitol, aspirin, caffeine[2] (Fiorinol®)	1 tablet q4h 4 to 6/doy (moximum)	$0.10/dose
Isametheptene[2] (contoined in Midrin®)	1 capsule (stort) 3 to 5 cop/doy (maximum)	$0.15/dose

[1] The University of Iowo Hospitols ond Clinics ocquisition cost. Actual cost to potient will be greoter ond will vory depending on provider.
[2] Not recommended for use in children under 12 yeors of oge.

gingival hyperplasia, nausea or vomiting, and ataxia. Phenobarbital can cause behavioral disturbances and hyperactivity, particularly in children with pretreatment behavioral disturbances. In addition, the effect of chronic anticonvulsant use on intellectual function has not been completely defined.

Propranolol

This beta-adrenergic receptor blocker has proved to be an effective prophylactic medication for both adult and childhood migraine.[8, 9] A double-blind crossover study of 32 children between 7 and 16 years of age reported a significant reduction of migraine frequency in propranolol-treated versus placebo-treated children.[8] In addition, headache severity and associated nausea were diminished in children receiving propranolol. Although the mechanism of propranolol's antimigraine action is not completely known, beta blockers have widespread effects on aggregation and serotonin release by platelets. Adverse effects of propranolol use in children include weakness, fatigue, and sleep disturbances. Side effects can be minimized by introducing the drug slowly, usually beginning with 10 mg BID or TID. Contraindications include asthma and diabetes mellitus.

Cyproheptadine

This histamine and serotonin antagonist has been used to treat a limited number of children with migraine. In an uncontrolled study, 19 children, ages 6 to 16 years, received cyproheptadine for severe, recurrent migraines.[9] Responses to therapy included complete resolution of migraine in 4 children and improvement in 13. Mild sedation and weight gain were common side effects, each occurring in 40% of the children. Because of the atropinelike effects of the drug, cyproheptadine may be contraindicated in children with asthma or hypertension.

Amitriptyline

Amitriptyline hydrochloride, a tricyclic antidepressant, effectively reduces migraine severity in adult patients.[10] The antimigraine action does not appear to be related to the antidepressant activity of amitriptyline but rather to the effects of the drug on platelet aggregation and serotonin release. Although no controlled studies have been performed to determine the drug's efficacy in childhood migraine, amitriptyline may be of value in the adolescent with recurrent migraine unresponsive to other agents. Rash, hypertension, and nausea are among the reported adverse effects encountered with amitriptyline therapy.

Other Agents

Several other agents, including methysergide and clonidine have been used to treat children with recurrent migraine. Methysergide, an ergot derivative and serotonin antagonist, has been associated with severe fibrotic reactions and should be avoided. Pediatric doses have not been established. In a single controlled trial, clonidine, an antihypertensive agent, did not significantly reduce the frequency or severity of migraine attacks.[11]

(Please turn to page 184)

DRUG THERAPY REVIEW

(Continued from page 183)

THERAPEUTIC CONSIDERATIONS

The child with infrequent (fewer than 1 per month) or mild migraines (Table 1) can be adequately treated on a symptomatic basis with mild analgesics and removal of triggering or exacerbating environmental factors. The older child or the young child with well-characterized migraine aura will benefit from ergotamine tartrate. Occasional children can be treated with mild sedatives.

Prophylactic therapy (Table 2) should be considered in the child with frequent (more than 1 per month), severe, or complicated (ophthalmoplegic, hemisensory, or hemiplegic) migraine. The young child (less than 6 or 7 years of age) will often respond to phenobarbital or phenytoin. In the older child or in the child refractory to anticonvulsant therapy, propranolol is the drug of choice. Response to propranolol can be gradual and not occur for several weeks after introducing the drug. Amitriptyline or cyproheptadine may be useful in carefully selected patients.

Because spontaneous remissions frequently occur in childhood migraine, drug holidays should be instituted every 6 months or so for children receiving prophylactic therapy. Drugs should not be stopped abruptly, but rather withdrawn in tapering doses over a 2- 4-week period. The overall prognosis for childhood migraine is excellent. Nearly two-thirds of children will be improved or symptom-free by late adolescence. — James F. Bale, Jr., M.D., Assistant Professor, Division of Pediatric Neurology, Departments of Pediatrics and Neurology.

TABLE 2
DRUGS FOR MIGRAINE PROPHYLAXIS

Drug	Dose	Cost[1]
Phenoborbitol	3 to 5 mg/kg/doy	$0.003-30mg
Phenytoin	3 to 5 mg/kg/doy	$0.04/50 mg
Propronolol	5 to 10 mgTID (stort)	$0.06/10 mg
	20 to 40 mgQID (maximum)	$0.12/40 mg
Cyproheptodine	2 to 4 mgBID or TID (stort)	$0.14/4 mg
	12 to 16 mg/doy (moximum)	
Amitriptyline[2]	25 to 50 mg qHS (stort)	$0.02/25 mg
	200 mg/day (moximum)	

[1] The University of Iowo Hospitols ond Clinics ocquisition cost. Actual cost to potient will be greoter ond will vory depending on provider.
[2] Not recommended for use in children under 12 yeors of age.

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

COMPLAINTS — FINING AND CITATION

The State Department of Health, Division of Health Facilities, is charged with the responsibility for investigation of complaints about long term care facilities in Sections 135C.37 and 135C.38 of the Iowa Code. Those sections also give authority to the Care Review Committees, who are volunteers appointed to each facility by the Commission on Aging, to investigate alleged violations of requirements of Chapter 135C or the rules adopted pursuant to that chapter.

Complaints about long term care facilities have increased from 419, with 946 allegations, in 1983 to 531, with 1245 allegations, in 1984. Statistics for 1984 are not complete at this time, however, through October 31, 1984, substantiated complaints had increased from 31% in 1983 to 37% in 1984. Since May of 1984, when data collection started on abuse complaints because of an apparent increase, there have been 15 allegations of verbal abuse with 5 substantiated and 2 partially substantiated; 26 allegations of physical abuse with 8 substantiated and 1 partially substantiated; and 11 allegations of sexual abuse with 3 substantiated. Investigations are not completed on 1 allegation of verbal abuse, 4 of physical abuse and 2 of sexual abuse.

The Department accepts complaints from individuals who wish to remain anonymous as well as those from identified sources. A change in the Code, which became effective July 1, 1984, makes the name of the complainant confidential at all times; it is not subject to discovery, subpoena or other means of legal compulsion for its release.

Complaints can be written or verbal. When complaint allegations are received, they are categorized according to the rules alleged to be violated. As an example, if a complainant alleges a resident was not bathed, the complaint statement submitted to the facility at the start of the investigation would note an alleged problem with resident care.

On-site investigations are conducted within 20 working days (approximately 1 month) after the receipt of a complaint. Prior notification of complaint investigations or licensure surveys is not given to the facility. The Department representative investigating a complaint must notify the facility at the onset of the investigation that a complaint is to be investigated and the nature of the allegations. Although the complaint investigation need not be limited to the matter or matters complained of, it cannot be a general inspection of the facility unless it coincides with a scheduled general inspection. The Department cannot, therefore, go into a facility and do a general review of the facility, as is sometimes requested, unless there are allegations of problems with all areas.

As a result of a lawsuit filed against the Department in Polk County District Court, the Department is required to use a "preponderence of evidence" standard to determine whether complaints are substantiated. This is a lesser standard of proof than beyond a reasonable doubt. A preponderence of evidence standard means, in essence, that the investigator, after reviewing all the evidence, is left with the reasonable belief the alleged violations are more likely true than not true. Additional requirements were also imposed as a result of this lawsuit for contacting and interviewing individuals including the complainant, if

(Please turn to page 186)

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

STATE DEPARTMENT/PUBLIC HEALTH

(Continued from page 185)

known, the victim of the alleged violations, if they are known and able to communicate, the alleged perpetrator and all witnesses having knowledge of facts related to the complaint.

A facility can receive a statement of deficiencies or be placed on fining and citation as a result of deficiencies noted at the time of the general survey or as a result of a substantiated complaint. In 1984, 68 citations were issued to 63 facilities.

There are 3 classes of violations for which a facility may be cited. Class I violations are the most serious and are defined as that which presents an imminent danger or a substantial probability of resultant death or physical harm to the residents. A Class II violation is one which has a direct or immediate relationship to the health, safety, or security of residents but presents no imminent danger nor substantial probability of death or physical harm to them. Class III violations are those not classifiable under the criteria for Class I or II or are not classified in the rules. Class I fines range from $500 to $5,000, Class II from $100 to $500 and Class III violations do not carry a penalty. The Department stipulates the correction date when citations are issued. If correction is not made by that time, a $50.00 daily fine can be imposed for each citation not corrected.

Any facility receiving a citation has the right to appeal the actions of the Department. Facilities are notified of these rights when the citation is sent to them. An annual report of fining and citation activities is compiled and available to the public upon request.

The Department would like to thank all physicians who have expressed their concerns on the care of their patients. We would like to encourage you to expect proper care for your patients in long term care facilities and to notify the Department when problems are noted. The number to call is (515) 281-4115.

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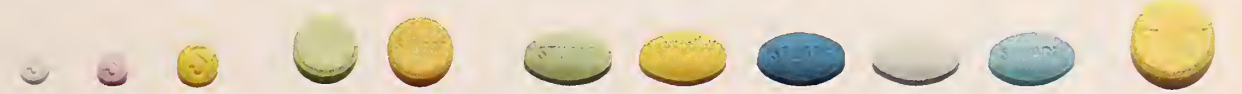


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See following page for brief summary of prescribing information.

SORBITRATE®
(ISOSORBIDE DINITRATE)

Please consult full prescribing information before use. A summary follows:

INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

STUART PHARMACEUTICALS
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STR-2282

February 1985 Morbidity Report

Disease	Feb. 1985 Total	1985 to Date	1984 to Date	Most Feb. Cases Reported From These Counties
Amebiasis	5	6	5	Hancock, Johnson
Brucellosis	0	0	1	
Chickenpox	944	1851	1562	Scattered
Campylabacter	14	19	27	Scattered
Cytamegalavirus	0	0	4	
Eatan's Agent infection	0	5	4	
Encephalitis, viral	2	5	2	Johnson, Scott
Erythema infectiosum	0	0	0	
Gastroenteritis (GIV)	2792	4273	4129	Scattered
Giardiasis	16	42	30	Scattered
Hepatitis, A	2	3	6	Hordin, Johnson
Hepatitis, B	10	17	21	Scattered
Hepatitis, Non A-B	3	3	4	Adair, Lee, Scott
Hepatitis type unspecified	2	3	1	Clinton, Kassuth
Herpes Simplex	81	150	123	Scattered
Herpes Zaster	0	0	0	
Histaplasmasis	0	0	0	
Infectious mananucleasis	23	33	38	Scattered
Influenza, lab confirmed	56	64	53	Scattered
Influenza-like illness (URI)	9983	12500	17142	Scattered
Legianellasis	0	1	0	
Malaria	0	0	1	
Meningitis				
oseptic	1	6	5	Scott
bacterial	12	30	25	Scattered
meningacaccal	1	3	12	Worren
Mumps	1	2	7	Plymouth
Pertussis	1	1	3	Scott
Rabies in animals	18	34	22	Scattered
Reye Syndrame	0	1	0	
Rheumatic Fever	0	0	0	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmanellosis	4	13	37	Scattered
Shigellasis	1	2	11	Marion
Taxic Shack Syndrome	2	3	3	Boone, Johnson
Tuberculosis				
total ill	4	14	9	Polk, Pottawattamie
bact. pos.	3	12	6	Polk
Typhoid Fever	0	0	0	
Venereal diseases:				
Ganarrhea	349	689	713	Scattered
Syphilis	5	8	5	Johnson, Lee, Lyon, Polk

Other Non-Reportable Diseases: Chlamydia — 4, Johnson, 1, Lee, 1, Polk; Clanarchis — 1, Linn; Ureoplasma Urealyticum — 1, Johnson, 1, Mahaska, 1, Scott.

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Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

* **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

BRS-DZ:L39

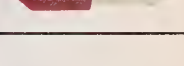
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With Isoptin, fatigue, bradycardia and mental depression are rare. Unlike beta blockers, Isoptin can safely be given to patients with asthma, COPD, diabetes or peripheral vascular disease. Serious adverse reactions with Isoptin are rare at recommended doses; the single most common side effect is constipation (6.3%).

Cardiovascular contraindications to the use of Isoptin are similar to those of beta blockers: severe left ventricular dysfunction, hypotension (systolic pressure <90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no artificial pacemaker is present) and second- or third-degree AV block.

So, the next time a nitrate is not enough, add Isoptin... for more comprehensive antianginal protection without side effects which may cramp an active life style.



ISOPTIN. Added antianginal protection without beta-blocker side effects.

Please see brief summary on following page.

ISOPTIN® TABLETS
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Contraindications: Severe left ventricular dysfunction (see *Warnings*), hypotension (systolic pressure <90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no pacemaker is present), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g., ejection fraction <30%) or moderate to severe symptoms of cardiac failure. Control milder heart failure with optimum digitalization and/or diuretics before ISOPTIN is used. ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild, and controlled by decrease in ISOPTIN dose). Occasional elevations of liver enzymes have been reported; patients receiving ISOPTIN should have liver enzymes monitored periodically. Patients with atrial flutter/fibrillation and an accessory AV pathway (e.g., W-P-W or L-G-L syndromes) may develop a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion. AV block may occur (3rd degree, 0.8%). Development of marked 1st-degree block or progression to 2nd- or 3rd-degree block requires reduction in dosage or, rarely, discontinuation and institution of appropriate therapy. Sinus bradycardia, 2nd-degree AV block, sinus arrest, pulmonary edema, and/or severe hypotension were seen in some critically ill patients with hypertrophic cardiomyopathy who were treated with ISOPTIN. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of overdosage. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, patients should be monitored closely. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function or in patients who have also recently received methyldopa. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patient carefully monitored. ISOPTIN may have an additive hypotensive effect in patients receiving blood-pressure-lowering agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C:* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor, and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR<50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%). The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: confusion, paresthesia, insomnia, somnolence, equilibrium disorders, blurred vision, syncope, muscle cramps, shakiness, claudication, hair loss, maculae, and spotty menstruation. Overall continuation rate of 94.5% in 1,166 patients. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in 80 mg and 120 mg sugar-coated tablets. July 1982 2068

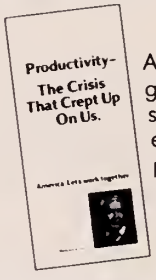
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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Walter M. Block, Cedar Rapids, has retired from his pediatric practice. Dr. Block graduated from the Berlin Medical School and earned a medical degree from the University of Bern, Switzerland. He came to the United States in 1938; studied pediatrics at the University of Cincinnati and the University of Iowa and located in Cedar Rapids in 1941. Dr. Block will continue writing his weekly column for the Cedar Rapids Gazette entitled "How To Raise Kids." . . . **Dr. B. K. Wasiljew,** Mason City, has been named a fellow in the American College of Surgeons.

At a recent meeting of the Clinton County Medical Society, **Dr. Joseph E. O'Donnell,** longtime Clinton physician, was presented a plaque noting life membership in the Society. Dr. O'Donnell received the M.D. degree at Northwestern University School of Medicine; interned at Cook County Hospital; served his surgery residency at Passavant Memorial Hospital and later became a fellow at the Mayo Clinic in Rochester, Minnesota. Dr. O'Donnell is a past president of the Clinton County Medical Society; past president of the Mercy Hospital medical staff and former Iowa regent for the International College of Surgeons. . . . **Dr. Robert L. Eggers,** Nevada, has been named chairman of the newly formed Legislative Committee of the Iowa Society of Anesthesiologists. Other members of the Committee

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are **Dr. Jack Moyers,** Iowa City; **Dr. Merlin G. Osborn,** Cedar Rapids; **Dr. F. Craig Glynn,** West Des Moines; **Dr. Donald L. Sweem,** West Des Moines; **Dr. Jackson D. VerSteeg,** Des Moines; **Dr. Merwyn E. Larson,** Mason City; **Dr. Dallas O. Minchen,** Council Bluffs; **Dr. Stephen Stefani,** Marshalltown and **Dr. James R. McKlveen,** Ames. . . . **Dr. John R. Ebensburger,** Charles City, has been named president of the Floyd County Memorial Hospital medical staff. Other officers elected are **Dr. James C. Bloom,** Greene, vice president and **Dr. David G. Schweizer,** Charles City, secretary-treasurer.

DEATHS

Dr. Russell L. Olson, 84, Northwood physician for 50 years, died February 2 at the Lutheran Retirement Home. Dr. Olson received the M.D. degree at the U. of I. College of Medicine. He began medical practice in Northwood in 1930, retiring in 1980.

Dr. Winston C. Baltzell, 81, former Charles City physician, died January 26 at his home in Yalaha, Florida. Dr. Baltzell received the M.D. degree at the University of Louisville in Louisville, Kentucky, and served his surgery residency at the Louisville City Hospital. He began medical practice in Charles City in 1939, retiring in 1969.

Dr. A. J. R. Stueland, 72, Mason City, died February 12 at an Iowa City hospital. Dr. Stueland received the M.D. degree at Temple University in Philadelphia, Pa. He began medical practice in Mason City in 1947, retiring in 1981. Dr. Stueland was a fellow of the American Academy of Family Physicians and a medical consultant of the Chemical Dependency Services of North Iowa.

Dr. Jerome C. Tanous, 46, Council Bluffs, died February 12 at Mercy Hospital in Council Bluffs. Dr. Tanous received the M.D. degree at Creighton University School of Medicine in Omaha, Nebraska; interned and served his radiology residency at St. Joseph's Hospital in Omaha. He was chief of the Radiology Department at Mercy Hospital; member of American Institute of Ultrasound in Medicine; Radiological Society of North America and American College of Radiology.

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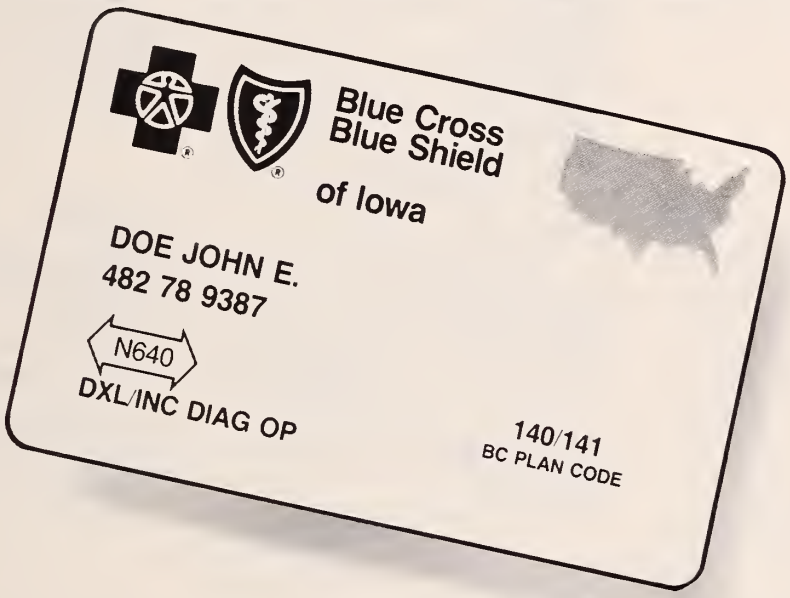
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A Monthly Commentary

IN THE PUBLIC INTEREST

Outstanding Leadership

FIFTEEN YEARS ago this month The University of Iowa reached into the ranks of its own medical faculty for a new dean: John W. Eckstein, M.D., professor of internal medicine.

The new dean was a native Iowan, a graduate of Loras College and The University of Iowa College of Medicine. At 46, he had already achieved recognition for his research in cardiovascular diseases.

Those with long memories will recall the medical profession was in some turmoil in this state in the late 1960s. The numbers of physicians dying, retiring and leaving Iowa to practice elsewhere were greater, year after year, than the numbers entering or establishing practices in Iowa. With few exceptions, the internships and residencies available in Iowa community settings were not attracting graduates. They were leaving the state in some numbers for training opportunities elsewhere. The College of Medicine was being blamed by overworked practitioners for not turning out more doctors — and for not, somehow, indenturing greater numbers of its graduates to practice in Iowa.

Shortly after his appointment, Dean Eckstein was asked by IOWA MEDICINE to set forth his plans and hopes for the college. His closing paragraph summed up those expectations thusly:

"We are trying to give Iowa a new package in medical education — a new curriculum, formalized externship programs, a new department of family practice, a new department of community health, model clinics, expansion of allied health units, expansion of continuing education, educational affiliations with community hospitals, and more doctors."

Those were welcome words. And they proved to be much more than mere words: they became programs, to be implemented and subsequently carried out by Dean Eckstein and his faculty, in cooperation with the practicing profession and the Iowa Medical Society.

Today the College of Medicine enjoys excellent relationships with the profession, whose members interface with faculty and students in many helpful ways. The pattern of physician migration has been reversed, with Iowa gaining about 70 new practitioners a year — nearly half of them primary care physicians.

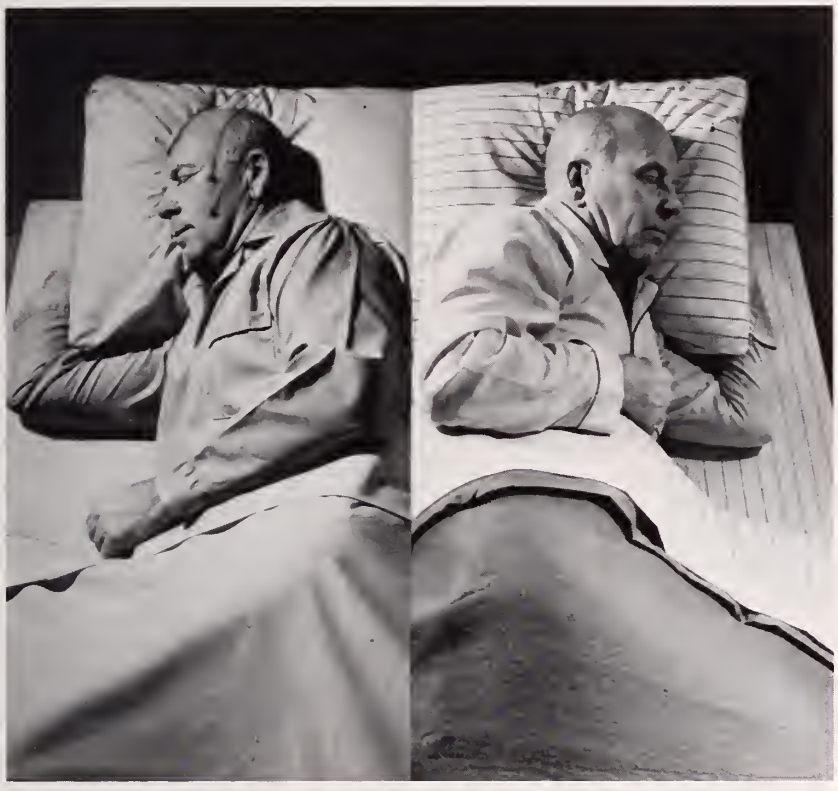
Other states look to what has become "the Iowa model" of community-based family practice residency training, over half of whose graduates stay in Iowa — most of them in towns under 10,000.

The Iowa medical faculty has gained both in size and in stature, with many of its members widely recognized as "achievers," and several departments ranked among the best in the country.

Research and other "outside" support has increased from $14 million in 1970 to $47 million this year — which has not only strengthened teaching greatly, but which continually makes new knowledge and techniques available to the practicing profession — e.g., the Iowa hip joint, the Panje "voice-button," cochlear implants, dietary control of coronary artery diseases, breast cancer findings, etc.

For these and many other good things that have transpired in our state university's medical school, IOWA MEDICINE salutes John W. Eckstein, whose leadership has so clearly been "In The Public Interest."

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May 1985

IowaMedicine

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ABOUT THE COVER



The May cover calls attention to the 1985 observance of National High Blood Pressure Month. This year's theme is "Make Control Your Lifetime Goal." Current information about hypertension is found on pages 228 to 230. A principal thrust now is one of individualized treatment. In this connection the patient is given specific goals and has input into the approaches used.

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Second Annual

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WILL THE REAL DOCTOR PLEASE STAND UP?

THERE USED to be a popular television program called *To Tell The Truth*. The format was simple. There were 3 persons seated on a platform. The show moderator read information about 1 of the 3 persons. By questioning the 3 persons on the platform, a panel was to determine which of the 3 persons was the one about which the information was true.

Today it appears that more than one scenario can be written about a DOCTOR who might be a part of such a panel. Some might suggest that a DOCTOR makes a lot of money, is ostentatious in his choice of cars and homes, and is more concerned about his income and his turf than he is about taking care of the needy. This scenario also describes the DOCTOR as very frugal in time and money contributions to his community.

If I were to describe a DOCTOR, he would be dedicated, concerned and caring about his patients, often frustrated by third party limitations on what he can do for his patient, but doing his best to understand and treat with equal parts of skill and compassion.

Surveys of patients show that they rank THEIR DOCTOR very high but DOCTORS as a GROUP much lower and ORGANIZED MEDICINE lower yet.

As doctors, we must be aware of this and realize that, busy as we are, we must INDIVIDUALLY and COLLECTIVELY devote the time to do those things to let our patients know who it will be when we are asked, "WILL THE REAL DOCTOR PLEASE STAND UP?"

John Tyrrell, MD

John E. Tyrrell, M.D.
President

What Should Iowa Physicians Know About Medical Record Retention?

THE NEED for Iowa physicians to know when and how to release medical records was discussed in IMS Reference Presentation No. 1 *(March 1985)*. This earlier presentation was the first in a series of informational documents planned by the Iowa Medical Society Judicial Council for use by member physicians.

Corollary to the previous discussion covering the release of medical records are these comments on the retention of records. This is an equally important aspect of practice management. As noted before, this material has been prepared by IMS legal counsel at the request of the Judicial Council.

It should be restated that these suggestions are offered as just that — *suggestions*. Each Iowa physician must consider his or her own situation as to the space, time and expense which can be devoted to medical records. Informed individual judgment lies at the heart of an efficient and practical medical records policy. These comments will help in making an informed judgment.

Individual Retention Considerations

The care, maintenance and disposition of medical records must be addressed by all physicians. Each medical practitioner must consider his or her own situation in developing a policy on record retention. Various factors are apparent: available space, expansion rates, the endurance of the paper and folders and storage safety requirements. The availability and cost of microfilm, microfiche or computer storage capabilities may warrant consideration. Since each physician has a different situa-

In today's medical practice environment, it is important for Iowa physicians to understand as much as possible about the possession and retention of their records. Two basic reasons exist for having a sound medical records retention policy. First, obviously, is the need to support and facilitate the delivery of proper medical care to the patient. And, secondly, the records could be crucial in the defense of any malpractice claims. This overview discussion summarizes the importance of having a medical records retention policy.

tion, the only general suggestion is this: *If the preceding considerations are not a problem, retain all records*. There have been no cases where physicians have been faulted for retaining records — only cases where they have *failed* to do so properly.

The primary purpose for retaining medical records is to assist in the delivery of proper patient care. Records should be retained if there is a continuing medical need for them. It must be remembered that a physician's duties do not cease upon the rendering of medical services. Both the patient and the law recognize that making and retaining medical records are part of the services supplied to the patient. As with the medical service itself, the physician must exercise care to maintain the records in a manner that best serves the interest of the patient.

A secondary purpose for retaining medical records is to assist in the defense of potential malpractice claims. Under Iowa law, malpractice actions must be commenced within 2 years after the date on which the patient knew or should have known of the injury or death, but in no event more than 6 years after the date of the act, omission or occurrence in question (except in cases in which a foreign object has been unintentionally left in the body). *Iowa Code Section 614.1(9) (1983)*. If the patient dies during the sixth year, the time for commencing an action may be extended until one year after death, thus increasing the potential limitation period to 7 years. *Iowa Code Section 614.9 (1983)*.

A logical period for retaining records would thus be 7 years after the last contact with the patient. Six years can alternatively be used if the likelihood of potential claims arising from the one-year extension is thought too remote as a practical matter to warrant the additional one year of record retention. Whether 6 or 7 years is chosen, it is suggested that 2 months be added to the time to allow for receipt of court papers in the event of an "eleventh-hour" court filing.

Special Retention Factors

There are 3 types of patients who pose special problems in the retention of medical records — minors, mentally ill patients and patients under experimental treatment or research.

With respect to minors, Iowa law extends the period in which a patient may commence legal action for treatment which occurred during minority until his or her nineteenth birth-

day. *Iowa Code Section 614.8 (1983).* This is true even if the treatment was given in infancy. If the patient dies between his or her eighteenth and nineteenth birthdays, the time for commencing an action may be extended until one year after death, thus increasing the potential limitation period to the patient's twentieth birthday. *Iowa Code Section 614.9 (1983).* As before, 2 months should be added to allow for receipt of court papers in the event of an "eleventh-hour" filing.

For minors, then, records should ordinarily be retained until the patient's twentieth (or nineteenth) birthday plus 2 months, or 7 (or 6) years plus 2 months after the physician's last treatment of the patient, *whichever is longer.* In some cases, however, practical considerations may dictate a shorter retention period, as, for example, in the case of a patient seen only once at age 3 for a routine and uneventful check-up.

Mentally ill persons, like minors, are provided an extended period of limitations in which to commence a legal action. They are permitted to commence an action at any time within one year after they cease to be disabled, or within the normal six-year limitations period, whichever last occurs. *Iowa Code Section 614.8 (1983).* A "mentally ill person" is broadly defined by statute to include mental retardates, psychotic persons, severely depressed persons and persons of unsound mind. *Iowa Code Section 4.1(6) (1983).*

The safest policy is to retain records for extended periods of time if a patient is or may be mentally ill, particularly if there is a possibility of future legal action. In such cases records should be retained for one year plus 2 months after the patient dies or otherwise clearly ceases to be disabled, or 7 (or 6) years plus 2 months after the physician last treated the patient, *whichever is longer.*

Experimental Medical Services

A final area presenting particular problems in a medical records retention policy concerns patients who have been provided unique, experimental or innovative medical services. In the 1930s, some hospitals and physicians routinely provided head or neck radiation to their patients. In the 1970s, lawsuits were filed alleging that these hospitals and physicians had negligently increased patient susceptibility to thyroid cancer. The availability of records would have greatly aided in the defense of these cases. Modern advancements in medical technology provide further examples of situations where side effects from a treatment may not be recognized for many years after the treatment has ceased.

Although the present 6-year statute of limitations for malpractice suits in Iowa would appear to bar such claims, it cannot safely be predicted what the state of the law will be in 20 or 30 years. In addition, there may well be medical reasons for retaining such records for longer than normal periods after the last treatment of the patient. Based on the foregoing, one authority suggests retaining medical records involving innovative or experimental patient care for at least 75 years. *II-A Hospital Law Manual, Medical Records Section 1-3, at 8 (1983).*

Method of Destroying Records

Once it is no longer necessary to retain a particular set of patient records, the records must be destroyed in a manner which protects their confidentiality. The method of medical record destruction is not controlled by statute in Iowa. However, shredding or burning are probably the best means to use. Procedures should be established in each office prescribing the manner of destruction, and these procedures should be uniformly applied. A notice should be maintained in the file identifying the records that were destroyed and stating date of the destruction, the method of destruction, the name of the individual who performed the destruction, and the reason for the destruction (e.g., "Eight years since patient last seen. No further need for retention of these records.").

Summary Comment

The suggestions offered here are meant to provide the Iowa physician with information necessary to make an informed decision regarding his or her own medical records policy. It is not possible in a short discussion of this nature to cover every contingency that might arise. The physician is encouraged to seek legal advice at the earliest possible time when a situation develops that is personally questionable or troublesome.



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Russell W. Currier, D.V.M.

QUESTIONS AND ANSWERS



Dr. Currier is Chief, Division of Disease Prevention, Iowa State Department of Health. He addresses health hazards associated with summer activities.

Summer activities may result in minor injuries. What are general recommendations for tetanus prophylaxis management?

Tetanus has decreased dramatically — about 100 cases annually in the U.S. About two-thirds of the current cases are in individuals over age 50. Many adults are inadequately boostered while children tend to be "over-boostered." We encourage only Td for adults and children over age 7; pediatric DT should be used for children under age 7, if DTP is contraindicated. These products additionally protect against diptheria. Following local wound care, boosters should be administered to anyone with uncertain immunization history, or anyone who has received 2 or less total doses of toxoid. Clean, minor wounds require boosters in individuals who have had 3 or more doses of toxoid, if more than 10 years has elapsed since the last dose. Serious, contaminated wounds require a booster if more than 5 years has passed since the last dose. Tetanus immune globulin is indicated for severe, contaminated wounds where there is no reliable history of immunization, or where only one dose of toxoid has been received.

Are there risk factors associated with certain insect bites? What is the best approach in handling these bites?

Mosquitoes pose some health hazards to Iowans. Small children scratch bite areas, creating impetigo-like infections that require professional care. More seriously, mosquitoes can transmit viral encephalitis, due to Western Equine virus or California (LaCrosse) virus, which can be treated only symptomatically. To prevent exposure to the virus, use mosquito repellant and protective clothing at dusk when mosquitoes are most active, especially for small children. Tick bites can result in transmission of Rocky Mountain Spotted Fever, particularly in southern Iowa counties. Camping and other outdoor activities should include frequent checks for ticks. Gently pull ticks off with your hands. If tweezers are available, grasp the tick by the head, close to the site of skin attachment and carefully remove without crushing.

Swimming is another summer-related activity with potential hazards, correct?

Yes, swimming poses numerous hazards most of which can be prevented. These include: 1) *Diving injuries* — Some accidents associated with shallow water diving have resulted in brain injuries and paraplegic paralysis. There are also a large number of less severe head injuries and other poolside accidents resulting from uncontrolled running and slipping. 2) *Entrapment, disembowelment* — Incidents of entrapment and disembowelment in children have been associated with unpro-

(Please turn to page 223)

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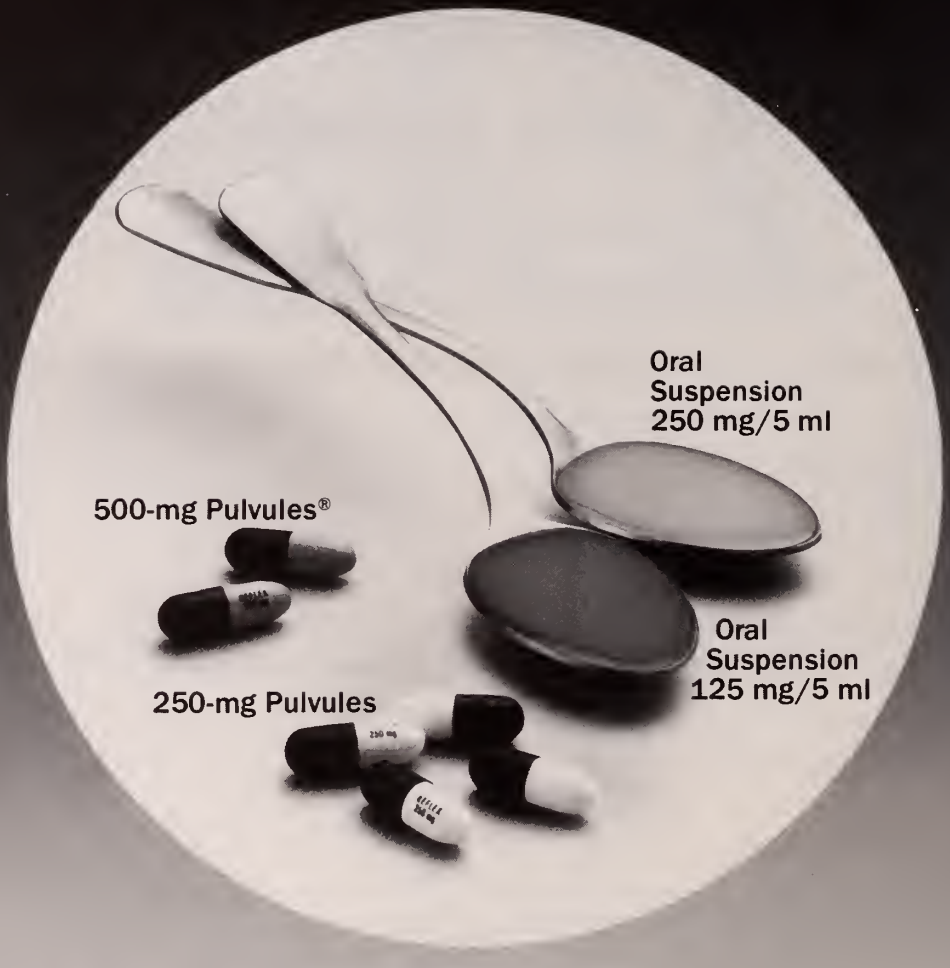
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Small-Area Variations In Iowa Hospital Utilization

JOHN M. KUDER, Ph.D.,
LINDA K. DEMLO, Ph.D.,
JAMES P. CURRY, Ph.D., and
SAMUEL LEVEY, Ph.D.
Iowa City, Iowa, and
Detroit, Michigan

A multi-faceted approach to utilization control in Iowa is appropriate, based on data findings reported here. Physician commitment and involvement are described as among the most critical factors. When physicians evaluate use patterns the prospects for any appropriate modifications are heightened.

DECISIONS ABOUT hospital utilization are critical to the health of the patient, as well as to the cost of medical care. So when there are regional variations in hospital use per capita, there is a basis for debate.

This debate has been particularly lively in Iowa where historically statewide hospitalization rates have been significantly above the national average. Small-area variations on all measures of Iowa hospital use are both large and persistent over time — a phenomenon perplexing to researchers, providers and policymakers. It is important to identify the reasons for these variations, to provide guidance to those seeking to lower hospital costs by reducing hospital use rates in high-use areas. Without such information, the quality and equity of medical care could be seriously compromised.

In early 1982, the Health Policy Corporation of Iowa (HPCI) contracted with the Graduate Program in Hospital and Health Administration and the Center for Health Services Research at The University of Iowa to conduct a study of small area variations in hospital utilization. The project was conceived as an extension of the research conducted by ServiShare of Iowa *(McCracken, Latessa, Wennberg, 1982)* which documented substantial variation in admission rates for hospital service areas in Iowa.

The purposes of the study reported here were (1) to analyze the factors associated with small-area variation in hospital utilization in Iowa, using a unique combination of data sources, and (2) to review the literature on the effectiveness of various utilization control strategies. This is an overview of the background and methodology of the study, and a summary of its conclusions.

The authors are associated with the Center for Health Services Research, College of Medicine and Graduate College, The University of Iowa.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF MAY 1985

Background

The Iowa hospital *admission rate* for all nonpsychiatric admissions in 1980 was 20% higher than the national rate. Although both rates declined by 1982, the Iowa rate remained about 15% above the national rate. Between 1980 and 1982, average *length of stay* for nonpsychiatric admissions in Iowa increased by about one-half day to 8.1 days — somewhat longer than the national average.

The admission rate and length of stay statistics are reflected in total *days of care*. Iowa days of inpatient care per 1,000 population for nonpsychiatric admissions were about 17% higher than the national figure in 1982, while the comparable figure for all admissions (including psychiatric) was about 40% over the national average. Occupancy rates in Iowa have tended to be lower and the number of beds per 1,000 population higher than the national statistics.

Although it is widely believed that current hospital utilization in Iowa has dropped well below 1982 levels, statewide utilization data for the entire population covering the last two years is just now becoming available for verification purposes.

Research reported by HPCI in 1980 indicated *days of hospital care* per capita in Iowa were among the highest in the nation *(McCracken, 1980)*. Iowa ranked fifth among all states in *hospital admissions* per capita in 1980 — and the HPCI study also found substantial variations in admission rates and *length of stay* across geographical areas within Iowa; these were not explained by demographic characteristics or health care delivery characteristics.

The Servi-Share study found variation within specific diagnostic categories and types of surgical procedures which could not be explained by resource availability or population characteristics. Similar findings had been reported earlier for small areas in the Northeast *(Wennberg and Gittelsohn, 1973, 1975, 1980)*.

Effects of Patients and Resources

Attempts to explain regional variation in hospital use usually involve epidemiologic and economic examinations of *population characteristics*, or characteristics of *health care delivery systems* within the regions *(Rothberg, 1982)*. The first approach studies ethnic composition, socioeconomic status, degree of urbanization, age-related characteristics and patient demand as sources of variation in hospital use. The second approach focuses on such factors as diagnostic mix, hospital bed supply, physician supply and nursing home bed supply.

Empirical support for the importance of *population characteristics* is somewhat mixed. For example, relationships between such factors as ethnic and age composition of areas and utilization have been found. However, they have not been consistently replicated across studies using different methods. A similar picture is found for the impact of *health care delivery characteristics* on hospital use — significant regional variations persist even when supply variables are held constant. As a result, some researchers have concluded that *differences in physician practice styles* are the important "missing link" that directs the relationship between population characteristics, service supply and hospital use *(Wennberg, 1984; Wennberg, McPherson, Caper, 1984)*.

Study Methods

To examine systematically the factors associated with small-area variation in hospital utilization in Iowa, detailed information on hospital use, population characteristics, health care resources and providers was collected:

1. Hospital discharge abstracts were secured from the Health Services Data System (HSDS) maintained by Servi-Share of Iowa for those residents of the study areas hospitalized during 1980.
2. A mail questionnaire survey of samples of households was conducted during the summer of 1983, which elicited information on demographic characteristics, health insurance coverage, illness and health services utilization.
3. A telephone interview survey of office-based physicians practicing in the study areas was conducted during the summer of 1983 to obtain data concerning physician characteristics and hospital use patterns.
4. A mail questionnaire survey of a subsample of these physicians obtained data about the likelihood of hospital admission for patients with different socioeconomic and third-party coverage characteristics.
5. Several additional data sources were examined to obtain information on the supply of

health resources (hospital beds, physicians, nursing home beds, etc.).

A choice was made to study selected areas of the state more comprehensively and in-depth in lieu of a limited statewide analysis. The research analyses are based on data from three aggregated "use" areas, representing "low," "moderate," and "high" levels of hospital utilization. These areas were created by aggregating data from seven smaller hospital service areas. This procedure served to improve the statistical reliability of the results and helped to maintain the anonymity of the hospitals and physicians participating in the study.

The service areas were classified as "low-," "moderate-" or "high-use" areas depending on their hospital discharge rates. The two combined low-use areas had 20,130 hospital discharges recorded with HSDS during calendar year 1980. With a combined population of 128,075, the discharge rate was 157 per 1,000 residents. The moderate-use areas had a combined discharge rate of 208, and the high-use areas had a rate of 247. The admission rate for the state of Iowa during the same period was 202 per 1,000 population, indicating that the areas included in this study do, in fact, represent a range of variation around the rate for the state as a whole.

All information that would identify individuals was deleted from the data sets. Thus the data sets cannot be linked by individual patient or physician identifiers.

CONCLUSIONS

Considering all the data from the multiple sources of information, several overall conclusions emerge.

Population Characteristics

The data derived from *the household survey, the hospital discharge abstracts, and the physician interviews provide consistent support for the conclusion that population characteristics are associated with geographic variation in hospital admission rates.*

Residents of areas characterized by high

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hospital use rates were older and had lower incomes than residents of low-use areas. Residents of high-use areas were more likely to be covered by Medicare and had lower self-reported health status. In addition, residents of the high-use area were more likely to be readmitted to the same hospital during a 12-month period. There was little difference among the areas as to the likelihood of admission from home or from an acute care hospital or other health care facility. Patient disposition at discharge showed little variation, except that patients in the low-use area were somewhat more likely to be discharged to their homes and less likely to be discharged to other acute care hospitals.

The data also support the idea that physicians play a mediating role in the influence of population characteristics on hospital use. The sub-sample of physicians who reviewed specific patient scenarios indicated that the physician's decision to hospitalize a patient may be influenced by three nonclinical factors: (1) the travel time between the patient's residence and the source of medical care, (2) the absence of social support for the patient, and (3) the degree of financial hardship imposed on the patient.

However, it is clear that other factors also influence the hospital admission process. Geographical differences in hospital use remained even after controlling for age and sex differences in the population.

Physician Characteristics

The results generally support the conclusion that *physician background characteristics have little influence on admitting practices, with the exception of specialty status. Physicians in the high-use area were more likely to be engaged in general practice and family medicine and less likely to be surgeons or other specialists.*

The data suggest a relationship between reported workload and hospital admissions. Physicians in the high-use area have an average of 124 office visits per week, while their low-use colleagues have an average of 113 visits, a statistically insignificant difference. Physicians in the high-use area cared for a higher proportion of Medicare beneficiaries, spent significantly fewer hours per week seeing patients in their offices or the patients' homes, spent more hours per week with hospitalized patients, and were more likely to desire extra time to devote to their current patients.

Physicians in the low-use area spent more hours per week seeing patients in their offices or the patients' homes, fewer hours per week with hospitalized patients, and expressed a desire for more personal leisure. Physicians in the high-use area referred more patients for care outside the local service area, even though they were somewhat more likely to perceive the local area as having too many hospital beds. There were no significant differences between the high- and low-use areas in the physicians' overall perceptions of the quality of local health care resources.

Inpatient Utilization

In addition to the variation observed for all diagnoses, *the results of the study clearly indicated that there is substantial variation in hospital use within diagnostic groups across geographic areas after adjusting for age and sex differences. Many of the diagnoses which exhibited a high admission rate in the high-use areas also had longer lengths of stay.*

The data further indicated that consistent patterns did not appear with respect to surgical procedures for either admission rates or length of stay. *Thus, the factors which produced variation in hospital utilization across these areas appear to be associated with the medical management of particular disease entities as opposed to different surgical treatment modes.*

These empirical conclusions suggest that a multi-faceted approach to utilization control in Iowa would be appropriate. The cornerstone for this strategy should be physician involvement in, and commitment to, critically examining utilization profiles and considering clinical and nonclinical reasons associated with differences in utilization patterns among physicians, hospitals and service areas.

Physician Commitment and Involvement

Rather than examining the entire range of diagnoses and patient conditions, such a review might begin by focusing on selected diagnoses (or DRGs) for which unexplained variation in utilization has already been documented. Ultimately, this effort might re-

sult in the formulation of indicators for hospital admission, discharge, and use of alternative services to provide a framework for continuing education programs. The literature on such programs indicates that the chances of changing provider behavior are greater if physicians evaluate their use patterns relative to those of their colleagues and then participate in devising alternative strategies for providing medical care. Physician commitment and involvement appear to be the most critical factors; traditional didactic programs appear to be less successful. The leadership of influential physicians from the practice community is also said to be an important component of success.

These educational activities should occur with full cognizance of the potentially perverse incentives of prospective payment. Prospective payment systems should result in lower inpatient costs for third-party payers and may improve patient care. However, they also have the potential for reducing the quality of care by creating pressures to reduce the provision of services to patients. Physician-education programs should take these countervailing forces into account and devise utilization control strategies accordingly.

Secondary implications of the findings include the necessity to safeguard the accessibility and availability of needed health care, at the same time that utilization control programs are implemented. This study indicates that small-area variations in admission rates are at least partially a function of underlying population characteristics and health needs.

If health care resources such as hospital beds are reduced solely on the basis of financial considerations, an inadequate level of care may result that could ultimately be more costly in terms of total system cost. This may be especially true in the case of elderly patients who often require relatively intensive management of chronic and degenerative medical conditions. As the elderly proportion of the population increases, it will be important to monitor their health care needs to make sure that the necessary resources are available. Similar precautions may be required to meet the needs of women and children and other population groups.

A final implication of this study is the need to acknowledge the complexity and interrelationships of factors affecting hospital utilization in devising a utilization control strategy. This means that the linkages between population characteristics, physician practice patterns, the nature and volume of health care resources, and hospital practices should be taken into account. An ongoing program of health services research and evaluation is essential.

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Tables and additional references used in this study are available upon request, either from IOWA MEDICINE, 1001 Grand Avenue, West Des Moines, Iowa 50265 (515/223-1401), or the Center for Health Services Research, College of Medicine and Graduate College, The University of Iowa, S517 Westlawn, Iowa City, Iowa 52242 (319/353-7233).

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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



REFLECTIONS ON A WAY OF LIFE

SEVERAL YEARS AGO, I wrote some impressions on the wonders of nature while sitting in a rustic chair alongside a stream in the Colorado mountains.* Today I sit by a stream of a different sort. Before me is a waterfall rushing constantly across the rocks into a quiet pool. There is a solace in the roar of the rushing water. The stream is under control of the rocky edge and the pool becomes a quiet haven for several brightly colored fish; the fish are well fed and are not threatened by the rod and reel.

At the back of the stream and the pool are many vigorous plants, some with delicate white flowers, others with rather stalwart red blooms which stand straight and tall like marines in full dress. The white blooms appear as gentle onlookers in the shadows of palms and other tropical trees.

Over the continual noise of the rushing waters soft music whaffs through the air. The sky is blue with a few fluffs of white clouds. The sun is bright. The air is warm. This is a remarkable place set in a busy environment. I am not at some exotic retreat, nor far away from the maddening activities of man; actually I am seated in the atrium of a Phoenix hotel.

It is amazing what man can do to bring nature into an unlikely setting. A great portion of this hotel lobby or atrium is devoted to streams, waterfalls, a fountain, and many trees and flowers.

It is gratifying to see what extensive efforts have been taken to provide a restful setting, not a drab lobby filled with uncomfortable oversized chairs that add nothing to the pleasures of the hotel guest.

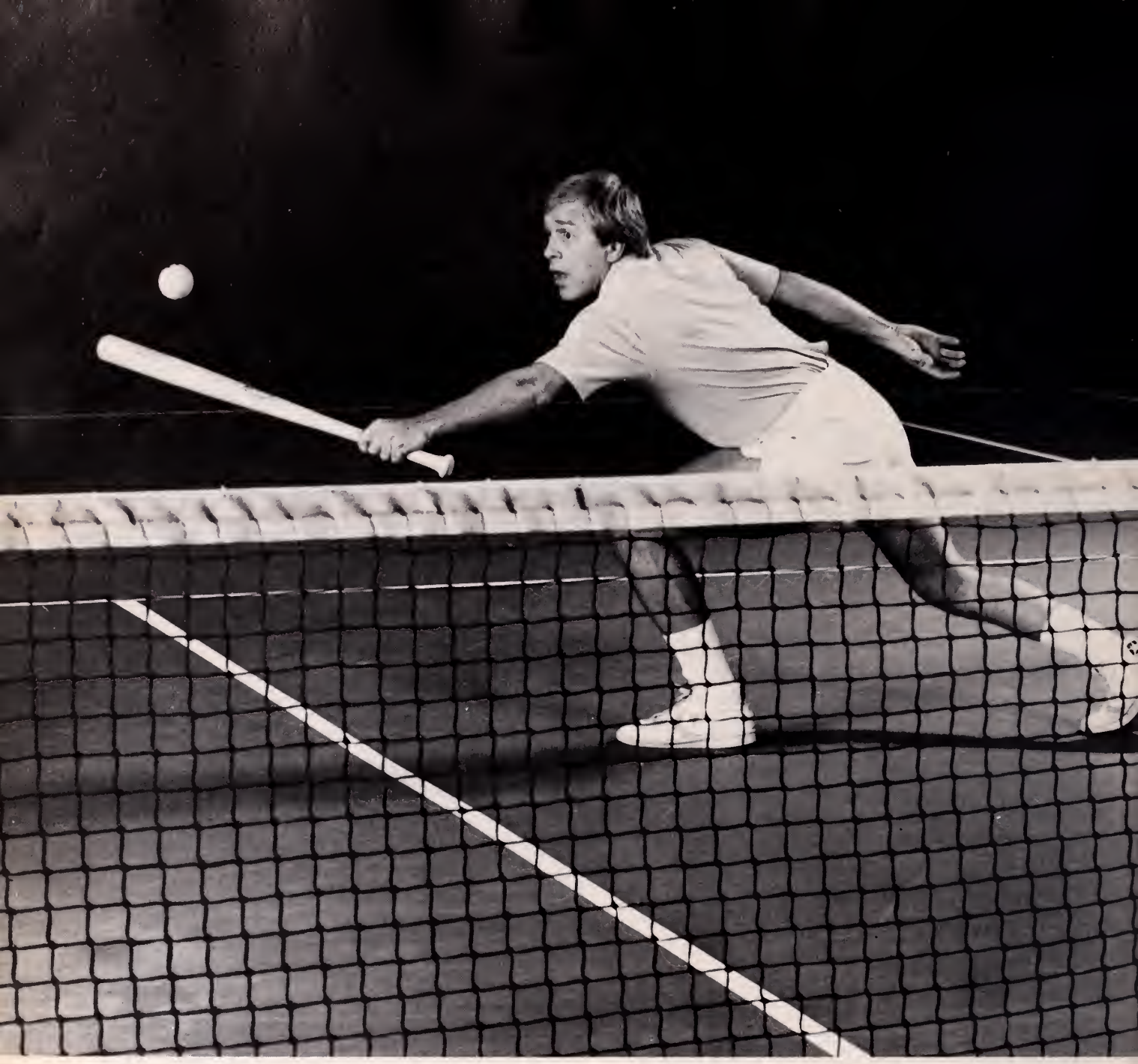
Man, however, is a strange animal. Too often the beauty of such a setting is fouled by thoughtless persons who make no effort to preserve that beauty. They throw papers, match folders and cigarette butts into the planted areas. Full-time caretakers are needed to pick up the debris. It reminds me of the needlepoint plaque on a wall in one of the physician's lounges at a local hospital which tells all that "Your mother does not work here, so don't expect someone to pick up after you."

> ***"Were the days of the past 'good,' or did they just seem that way? There is no doubt that medical science can provide so much more for humanity now than 3 or 4 decades ago, but let us not forget the caring also."***

I am thinking that it must be gratifying to work at this hotel. Open less than two weeks, it is a new haven for the traveler and the vacationer. One can quickly forget the wild traffic and the frantic efforts of the working world while seated here, or walking through the walkways amongst the pools, streams, and plantings. Life should be thus at all times, that we can get away from hectic efforts. Too frequently, we stay in the midst of our toils all the time — because unfortunately for physicians the legal ramifications of the practice demand our ever present attention lest we be charged with abandonment. Isn't life crazy that for our patients we recommend leisure, getting away from it all, and yet, we as conscientious physicians must be available at all times unless full arrangements are made for someone to accept our role while we are away.

(Please turn to page 221)

* JOURNAL OF THE IOWA MEDICAL SOCIETY, 66:451, November, 1976.



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Historical Vignettes

LOOKING BACK

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SPECIAL FORMS of arthritis require treatment peculiar to the infecting cause. It is obvious that the cause if found should be treated. . . . In gonorrheal arthritis the vaccine treatment is a valuable aid. A beginning dose of 10 to 25,000,000 dead gonococci should be injected gradually increasing the dose and repeating every three to five days. In chronic types give larger doses and less often. — **William H. Rendleman, M.D.,** Davenport, Iowa, *Infectious arthritis with special reference to the knee-joint.* JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, 1911; Vol 1:143-148.

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COMMENTING EDITORIALLY

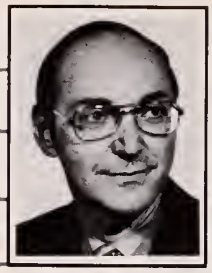
(Continued from page 219)

The practice of medicine has changed in many ways but still the patient retains control, though often that fact is refuted by some. In fact, physicians are even more available than in years past. The telephone, the beepers, group practices, and neighborhood shopping center clinics have greatly increased physician availability. Patients have come to expect more medical service and at their own convenience. Hence, in a way the time-honored personal "good old doc" tradition is slipping away — not rapidly, but somewhat insidiously. Is that good or bad? It depends on what the consumer (formerly known as the patient) expects of his medical vendor (formerly known as a personal physician). If it is an impersonal department store availability of medical service it may be there. Or, does the patient desire to retain the availability of personal medical care? That is where the distinction lies.

Surely, as I sit here near the waterfall it reminds me that much in life has gone over the falls. Were the days of the past "good," or did they just seem that way? There is no doubt that medical science can provide so much more for humanity now than 3 or 4 decades ago, but let us not forget the caring also. Our patients deserve the best we have to offer. Education is not everything; performance counts immeasurably as well. Then, there will be less dissatisfaction perhaps of consumer groups and legal adversaries who are critical frequently when most physicians, I am sure, are very conscientious and caring. Let us continue to demonstrate that image. The waters of our hectic lives may rush over the falls, but the tranquility of the pool will serve a haven for us in the end as we strive to do better. We need not rush through the tortuous rapids of life forever making it seem as though all is disorganized and without purpose. — M.E.A.

Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



CHAULMOOGRA OIL

I FIRST HEARD OF CHAULMOOGRA OIL during my medical sophomore course in pharmacology. It was mentioned briefly as the most widely used agent in the treatment of leprosy, even though it often provided but slight or uncertain benefit. Just for curiosity I have looked at the editions of Goodman and Gilman's standard pharmacology text *(The Pharmacological Basis of Therapeutics)* and found mention of chaulmoogra oil in the editions through number 4, published in 1970, but no mention in the editions of 1975 or 1980.

The language used in those first 4 editions itself provides an excellent narrative of the decline and fall of a therapeutic agent:

1941 — "Its only valid use is in the treatment of leprosy, in which condition it is undoubtedly superior to the host of other agents which have been employed."

1955 — "Chaulmoogra preparations have been replaced by sulfones for the treatment of leprosy in the United States. However, the drug still has many strong adherents and in many areas where leprosy is endemic it is the only type of therapy available."

1965 — "Controlled studies have never been carried out. There is presently general agreement that [it is] of very doubtful value."

1970 — ". . . use . . . in the therapy of leprosy has, with rare exception, been abandoned because of insufficient proof of effectiveness. . . . Sulfones . . . are the drugs of choice for the therapy of all forms of leprosy."

This sequence reminds me of the wry comment by that arch-cynic Voltaire:

"Therapeutics consists of administering remedies of which the practitioner knows nothing, to patients of whom he knows even less."

Why, you certainly might ask, would I now think about chaulmoogra oil or bother to reflect on when and how I learned about something worthless like that. A fair question, I grant. The answer lies in 2 circumstances. First, a young man of Latin-American origin recently came to the Dermatology Clinic where I work, who was found to have a florid case of leprosy. (Call it Hansen's disease, if you support the contemporary effort to strike the word leprosy from our vocabulary because of its enormous background of malevolent implications. It is particularly important, if one wishes to modify our medical language, to drop the word "leper." The history of the disease and our emotional reactions to its very name is a fascinating story that begins in the 13th chapter of Leviticus. But because leprosy, in contrast to smallpox, has by no means been eliminated from the earth, the issue of its emotionally tinged name remains for us to confront.)

The second circumstance grew out of the first and involves my recent trip to Hawaii. That opportunity led me to arrange a visit to the island of Molokai and ride a mule (more about him at another time) down the steep side of the cliff to the Kaluapapa peninsula, where formerly existed the leprosarium made famous by the work and publicity of Father Damien (born Joseph DeVuester). I prepared myself by reading his absorbing story in the biography, *Holy Man*, by Gavin Daws. His telling of the history describes well the complicated interconnections among disease, dedicated carers of the sick, and in this case, the internal politics

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Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

OUR MAN IN EDUCATION

(Continued from page 222)

of both church and state. Father Damien got himself into much trouble because he wanted, most insistently, more help for the patients in that dreadful place. (Ironically, that same place is, of course, rather like a paradise in regard to its usual lovely weather.) I suppose the only thing in contemporary experience that could approach the kind of emotional reaction that people formerly must have had to patients with leprosy would be the reaction now to patients with AIDS.

My visit to the site of the former leprosarium was a deeply emotional one, contrasting as it did the beautiful climate of that otherwise desolate place with its history of enormous human anguish. The isolation was accentuated by my return to Honolulu with all its modern conveniences, high level of tourism, and gaudy commercialism. The contrast between the 2 tropical places brought to mind stories by such excellent writer-travelers as Joseph Conrad, James Michener, and the medically-trained Somerset Maugham.

Just so you'll have a sense of closure, let me add that chaulmoogra oil came from the seeds of a tree that grows in Southeast Asia. Its mechanism of action was never elucidated. It was replaced, of course, by the truly effective sulfones soon after encouraging experimental work with them began in 1941.

QUESTIONS AND ANSWERS

(Continued from page 210)

tected suction outlets in wading pools and hot tubs. Disembowelment occurs when small children sit on suction drains from which protective grates have been removed. 3) *Drowning* — Drowning has a higher incidence rate at bathing beaches, lakes, etc. 4) *Pustular rashes/dermatitis* — Reported cases have increased, corresponding with the increase in the number of hot tubs and spas. These skin conditions are contracted from tubs and spas not properly designed or operated. High levels of coliform and pseudomonas bacteria relate directly to the lack of disinfectant residual, and poor cleaning and operation of filter systems. 5) *Giardia* — We have anecdotal reports suggesting transmission of giardia infections from swimming in lakes and rivers. To investigate, the Iowa State Department of Health, Disease Prevention Division, would appreciate any physician reports of giardia infections associated with swimming.

What health risks might be linked with international travel?

There are few risks to travelers in well-developed nations or areas that cater to American tourists. For tourist travel to developing nations, or specialized travel to remote areas, immunizations may be required or recommended and should be determined well in advance. Malaria continues to pose risks to travelers, especially in nonurban areas, and can be addressed with standard protocols.

Diarrheal disease, often called "turista," is probably the single most common illness affecting international travelers. Fifty percent or more of Americans traveling to developing areas will have a bout of travelers' diarrhea. The risk of contracting travelers' diarrhea may be lessened by following 5 general precautions regarding food and water. 1) Do not eat raw vegetables or fruits unless peeled or cooked. 2) Do not eat raw or rare meat or fish. 3) Avoid milk or dairy products, such as ice cream and soft cheeses, in areas where hygiene and sanitation are poor. 4) Avoid foods purchased from street vendors and do eat well-cooked foods while they are still hot. 5) If possible, drink only chlorinated water and avoid water and ice that is suspect. Safe alternatives to plain water are drinks made with boiled water, like coffee, tea or soup, or drinks such as beer or wine, and canned or bottled carbonated drinks. Even these measures may not prevent diarrhea. If a severe case of diarrhea develops, call for professional medical treatment. Avoid self-medication with over-the-counter remedies in foreign countries.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

ALTERATIONS IN DRUG SENSITIVITY AND PHARMACOKINETICS IN THE ELDERLY

IMPORTANT ALTERATIONS in the way patients respond to drugs occur with aging. For many reasons the elderly are more susceptible to adverse reactions from their medications. This is reflected in the incidence of adverse drug effects seen in several studies. Hurwitz *et al* found an incidence of adverse drug reactions of 3% in the age range of 20 to 29 years, which rose to a rate of over 21% between the ages of 70 and 79.[1] Furthermore, other studies have shown that the elderly are hospitalized for *and* die from complications of adverse drug effects more frequently than younger patients.

There are multiple factors to explain this trend. As listed in Table I, these have been divided into primary factors, that is, factors relating to alterations in how drugs are metabolized in the elderly (pharmacokinetics) and factors relating to alterations in drug effect at their site of action (pharmacodynamics). Additionally there are a number of "secondary factors" which contribute to this increase in adverse effects of drugs in the elderly (Table I). These factors are not directly related to the aging process but are secondarily related through the types of diseases and patterns of medical care which occur in the elderly age groups.

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

First, the elderly as a group are more prone to disease, especially chronic diseases necessitating chronic and often toxic medications. For example, congestive heart failure is much more common in the elderly age groups and this disease is commonly treated with digoxin, a drug which has a very low therapeutic index. Therefore an increased incidence of chronic disease leads to an increased rate of prescription of drugs and therefore increased incidence of adverse drug reactions.

Second, a reduction in "organ reserve" and the ability to maintain homeostasis may make the elderly more susceptible to the adverse effects of many drugs. With age, function in many organ systems declines, for example, renal function or cardiac reserve. However, under normal circumstances, the "extra capacity" which is built into these organ systems makes this decline in function not clinically evident. For example, maximum cardiac output may decline with age; however, this may not be clinically important until a drug is given to an elderly patient which further decreases cardiac output. Thus, propranolol given for hypertension to the elderly patient may precipitate heart failure by further aggravating a

TABLE I
ALTERATIONS IN DRUG RESPONSE IN THE ELDERLY

A. Primary Factors	
	1. Altered distribution, metabolism, excretion: Pharmacokinetics
	2. Altered drug effect at its target site: Pharmacodynamics
B. Secondary Factors	
	1. Increased incidence of disease
	2. Decreased ability to maintain homeostasis
	3. Increase in drug taking in elderly populations and trend to polypharmacy

"not clinically apparent" reduction in cardiac function. Another common event is the elderly male patient with minimal symptoms of "prostatism" given disopyramide for ventricular arrhythmias. In the face of marginally impaired bladder function, the anticholingeric effect of disopyramide may result in urinary retention.

Third, the elderly receive more drugs than the young. This was illustrated in one British study where individuals over age 65 accounted for only 12% of the population but over 33% of the national expenditure on drugs.[2] Thus the average elderly person is more likely to be taking a medication than a younger person and therefore is more likely to suffer an adverse drug effect from it. Not only are elderly patients more likely to be administered a drug but as individuals are more likely to take multiple medications at one time. Since the incidence of adverse drug effects is correlated with the number of drugs taken by any one individual, elderly patients are more apt to suffer adverse drug effects because they are more likely to take multiple drugs. Additionally, of course, they are more likely to suffer from adverse drug interactions.

PHARMACOKINETIC FACTORS RELATED TO ALTERED DRUG EFFECT IN THE ELDERLY

Pharmacokinetics relates to how drugs are absorbed, distributed through the body, metabolized, and finally eliminated from the body. We are now realizing that important alterations occur in these processes with aging.

Renal clearance of drugs is impaired with age. This is related to the general reduction in kidney function with aging as defined by the reduction in glomerular filtration rate measured by the creatinine clearance. In general, there is about a 50% reduction in creatinine clearance by age 70.[3] Therefore, the clearance rate for drugs which are primarily eliminated by the kidney is reduced approximately 50% in elderly patients. Compounds of particular concern are those that have low therapeutic indexes. For these agents, changes in clearance can result in toxic drug levels in elderly patients given "normal" doses. Drugs of special concern include digoxin, aminoglycoside antibiotics (e.g., gentamicin), chlorpropamide, and lithium. The implications of this reduction in renal function with age is that for drugs that are primarily metabolized by renal clearance, maintenance doses should be reduced by approximately 50% (or more) in elderly patients, depending on renal function. Drug concentrations in the blood may be followed, when available.

Drug metabolism by the liver may also be altered with aging. There are many processes involved in hepatic clearance of drugs. In general, enzymatic mechanisms have been subdivided into phase I reactions which include the hydroxylation, dealkylation, oxidation, acetylation, and reduction of drugs, and phase II reactions which involve complexing

"Since the incidence of adverse drug effects is correlated with the number of drugs taken by any one individual, elderly patients are more apt to suffer adverse drug effects because they are more likely to take multiple drugs."

drugs with larger, more water-soluble chemical groups, for example, glucuronidation and sulfation. Important reductions in phase I (but not phase II) pathways occur with aging and this is primarily related to reduction in the rate of hydroxylation and dealkylation of drugs. Thus many drugs that are primarily metabolized by these phase I pathways show reduced clearance.[4] These include many of the benzodiazepines (e.g., diazepam, chlordiazepoxide, and alprazolam). The reduction in clearance of these benzodiazepines is a major factor in the prolonged duration of action of these drugs in older patients. In addition, other diverse compounds including propranolol, quinidine, theophylline, and nortriptyline also demonstrate reduced hepatic clearance in the elderly. For all of these agents, any given dose will result in a higher drug level in the average elderly patient than in younger patients due to reduced clearance. This is of clinical importance especially for drugs with a low therapeutic index like quinidine and theophylline. Thus a dosing regimen that is appropriate for a younger patient may result in toxicity in an elderly patient.

Alterations in drug metabolism due to changes in volume of distribution of drugs with aging are much less clearly defined. The distribution of a drug relates to the apparent volume into which any given drug is mixed.

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DRUG THERAPY REVIEW

(Continued from page 225)

Since for many drugs, the effect of the drug is related to its concentration in the plasma fluid, a change in the volume of distribution of a drug will change the effect of any given dose of that drug. It must be remembered that volume of distribution is a property of individual drugs. The factors which determine the volume of distribution include water or fat solubility, plasma and tissue protein binding, pKa, and so forth. Important changes occur in body structure with aging that contribute to changes in volume of distribution. Thus elderly patients tend to have a reduced proportion of lean body mass and an increased proportion of fat than younger patients. These changes increase the volume of distribution of fat-soluble drugs and reduce the volume of distribution of water-soluble drugs. For example, diazepam, a fat-soluble drug, shows an increase in volume of distribution with age.[5] Therefore, for any given dose of diazepam, there will be a lower plasma concentration seen in elderly patients related to its increased volume of distribution.

Whether or not alterations in volume of distribution are of any clinical significance is unclear. This is partly related to the fact that these changes in volume of distribution are variable between individuals and different drugs. Additionally, a change in volume of distribution is only one factor determining plasma drug concentrations and hence drug effect. In the case of diazepam, the change in volume of distribution is small and in fact the reduction in drug concentration predicted from the change in V_d is counteracted by a decrease in the rate of its elimination from the body. Therefore, although changes in volume of distribution have been demonstrated for several drugs with aging, these effects are variable and are not generally of clinical importance in the treatment of the elderly patient.

PHARMACODYNAMIC FACTORS RELATED TO ALTERED DRUG EFFECT IN THE ELDERLY

The pharmacodynamic effect of the drug relates to its effects at its site of action. It has long been thought that pharmacodynamic effects of many drugs are altered with aging; for example, the commonly used anticoagulants including warfarin and heparin seem to have an increased effect in the elderly.

Adverse effects related to altered pharmacodynamics are especially important for the psychoactive drugs. Thus, narcotics seem to have an increased effect in the elderly and certain drugs (e.g., barbiturates) may in fact cause paradoxical pharmacodynamic effects. Therefore, barbiturates should be avoided in the elderly.

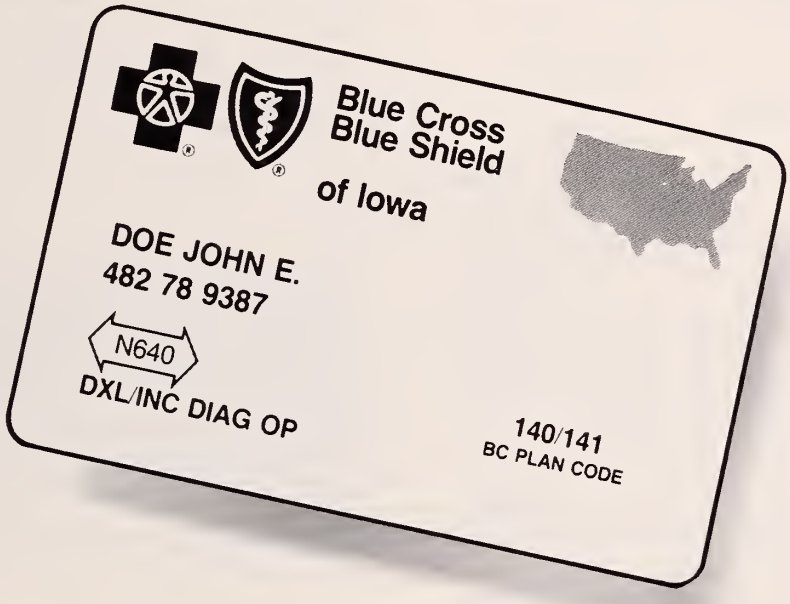
The alterations in pharmacodynamic effects seen in the elderly are variable for different drugs. Thus, while the drugs described above have an increased effect in elderly patients, other drugs show a reduction in efficacy. This was illustrated by Vestal *et al* who looked at the efficacy of the beta-adrenergic agents in increasing heart rate in young and elderly subjects.[6] They found that the dose of isoproterenol required to cause an increase in heart rate of 25 beats per minute was almost doubled in elderly patients. They suggested there was reduced sensitivity to this drug at its site of action. A molecular basis for this observation has recently been suggested. Feldman *et al* reported that lymphocyte β-receptors from elderly subjects showed a reduced sensitivity to agonist hormones.[7] Thus, in this setting a reduction in pharmacodynamic effect may be related to a reduction of sensitivity at the receptor level.

In summary, drug metabolism and drug sensitivity are altered in the elderly. These changes have important implications for both improving the efficacy of drug therapy and for diminishing the incidence of adverse drug reactions in the elderly. — Ross Feldman, M.D., *Assistant Professor of Internal Medicine and Pharmacology.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

HYPERTENSION CONTROL — A LIFETIME GOAL

EACH YEAR MAY IS DESIGNATED as National High Blood Pressure Month. Response to previous campaigns has been excellent. People had their blood pressure taken and learned the meaning of the blood pressure readings. Health care professionals started taking blood pressure readings of their patients on regular visits, and new medications were developed to enhance pharamacologic treatment.

The theme for 1985 is "Make Control your Lifetime Goal." The emphasis has changed from encouraging people to learn about their blood pressure, to patient compliance.

The Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure reviewed and revised the 1980 Report on the Management and Control of High Blood Pressure. In the 1980 Report, treatment was recommended for persons with diastolic readings between 90 and 95 mm/Hg. The 1984 Report suggests non-pharmacologic intervention begin at 85-90 mm/Hg.

As stated in the 1984 Report, "the goal of treatment for hypertension is to prevent morbidity and mortality attributed to high blood pressure. This means the reduction of elevated blood pressures to the extent that excess cardiovascular risk is eliminated."

The choice of treatment for any level of hypertension must be individualized. Compliance to any regimen appears to be better achieved when the patient is made aware of the specific goals and has some input in the approaches used. This is especially significant when it involves life style changes either as the primary treatment of the borderline or mild hypertensive or as adjunctive to pharmacologic therapy in the more severe hypertensive. The pharmacologic treatment for people with diastolic blood pressure readings 95 mm/Hg or higher continues to be the treatment of choice. Regimens are discussed at length in "The 1984 Report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure."

"People treated with nonpharmacologic regimens should be monitored closely because some may continue to progress to higher levels of diastolic pressure and need pharmacologic intervention."

People treated with nonpharmacologic regimens should be monitored closely because some may continue to progress to higher levels of diastolic pressure and need pharmacologic intervention. Dietary modifications have resulted in positive responses. Weight reduction is especially effective for treating children and young to middle aged adults, even if ideal body weight is not achieved. Another dietary factor to consider is moderate dietary sodium restrictions which may be significant for 20 to 25% of the population. Blood pressures should be monitored to determine individual sensitivity to sodium restriction. The role of other minerals, i.e. potassium, calcium, and magnesium has not been researched fully, therefore, specific therapeutic recommendations are not available.

Modification of dietary fats (polyunsaturated/saturated ration exceeding 1.0), in recent

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This information on public matters is furnished and sponsored by the Iowa State Department of Health.

SUMMARY RECOMMENDATIONS FOR FOLLOWUP AND CLASSIFICATION

FOLLOWUP CRITERIA BASED ON DIASTOLIC AND SYSTOLIC MEASUREMENTS ON TWO OCCASIONS* IN ASYMPTOMATIC INDIVIDUALS 18 YEARS AND OLDER

<table>
<tr><td rowspan="2">Diastolic Blood Pressure (mm Hg)</td><td colspan="3">Systolic Blood Pressure (mm Hg)</td></tr>
<tr><td>Less than 140</td><td>140 to 199</td><td>200 or greater</td></tr>
<tr><td>Less than 85</td><td>Recheck within 2 years**</td><td rowspan="2">1st Occasion
Confirm within 2 months

2nd Occasion
Evaluate or refer promptly to a source of care</td><td rowspan="2">Evaluate or refer to a source of care within 2 weeks</td></tr>
<tr><td>85 to 89</td><td>Recheck within 1 year</td></tr>
<tr><td>90 to 104</td><td colspan="3">1st Occasion
Confirm within 2 months

2nd Occasion
Evaluate or refer promptly to a source of care</td></tr>
<tr><td>105 to 114</td><td colspan="3">Evaluate or refer to a source of care within 2 weeks</td></tr>
<tr><td>115 or greater</td><td colspan="3">Evaluate or refer immediately to a source of care</td></tr>
</table>

*Two or more measurements should be taken on each occasion and the average used as the value for that visit.
**Rechecking within one year is recommended for individuals at increased risk (i.e., family history, obesity, blacks, oral contraceptive use, and high alcohol intake).
Source: *1984 Report of the Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure.*

BLOOD PRESSURE CLASSIFICATION BASED ON CONFIRMED* DIASTOLIC AND SYSTOLIC PRESSURES IN THE SAME INDIVIDUAL 18 YEARS AND OLDER

<table>
<tr><td rowspan="2">Diastolic Blood Pressure (mm Hg)</td><td colspan="3">Systolic Blood Pressure (mm Hg)</td></tr>
<tr><td>Less than 140</td><td>140 to 159</td><td>160 or greater</td></tr>
<tr><td>Less than 85</td><td>Normal Blood Pressure</td><td rowspan="2">Borderline Isolated Systolic Hypertension</td><td rowspan="2">Isolated Systolic Hypertension</td></tr>
<tr><td>85 to 89</td><td>High Normal Blood Pressure</td></tr>
<tr><td>90 to 104</td><td colspan="3">---------- MILD HYPERTENSION ----------</td></tr>
<tr><td>105 to 114</td><td colspan="3">---------- MODERATE HYPERTENSION ----------</td></tr>
<tr><td>115 or greater</td><td colspan="3">---------- SEVERE HYPERTENSION ----------</td></tr>
</table>

*The average of two or more measurements on two or more occasions.
Source: *1984 Report of the Joint National Committee on Detection, Evaluation and Treatment of High Blood Pressure.*

(Continued from page 228)

studies has been associated with lower blood pressures. Presently, there is not enough evidence to include this as a specific dietary change for hypertension control. However, in an attempt to reduce cardiovascular risk, serum cholesterols should be reduced to normal levels when feasible.

The use of alcohol also may contribute to blood pressure elevations. Therefore, as a therapeutic approach for hypertensives, those who use alcohol should do so with moderation, i.e. less than 2 ounces of ethanol daily. One ounce of ethanol is contained in 2 ounces of 100 proof whiskey, 8 ounces of wine, or 24 ounces of beer.

Tobacco use, specifically nicotine does raise blood pressure acutely, however, the effects of prolonged use have not been documented. Tobacco use does increase cardiovascular risk, therefore should be discouraged.

A regular aerobic exercise program may be helpful in a blood pressure control regimen and aid in weight control. An exercise program should be initiated only after an appropriate medical evaluation and in a gradual method. A referral to an exercise physiologist may be of benefit to these patients.

The 1984 Report is available from the Iowa State Department of Health, Hypertension Program, Lucas Building, Des Moines, Iowa 50319-0075.

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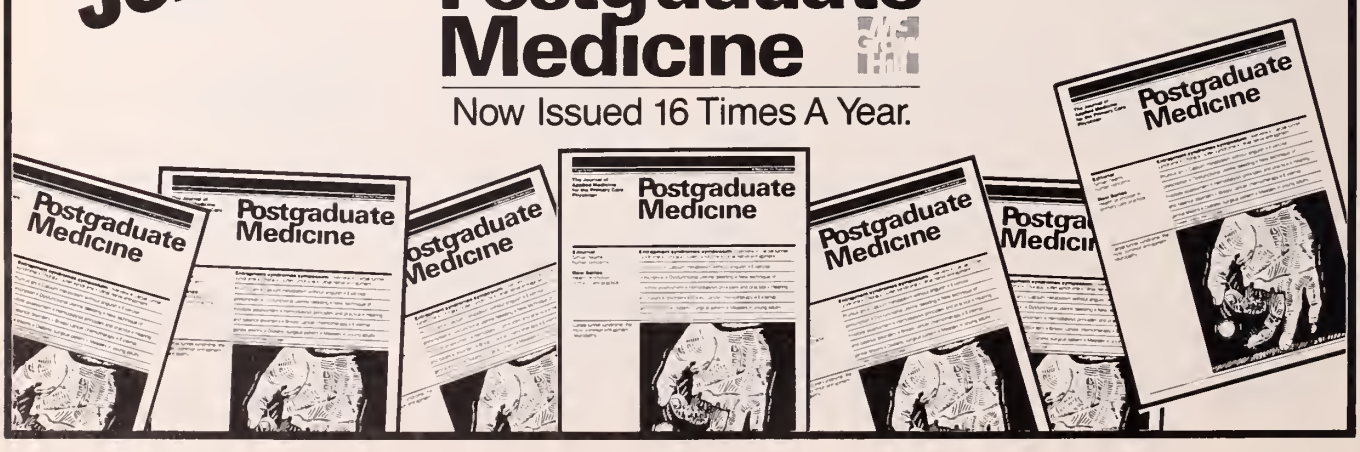
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See following page for brief summary of prescribing information.

SORBITRATE®
(ISOSORBIDE DINITRATE)

Please consult full prescribing information before use. A summary follows:

INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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Wilmington, DE 19897

STR-2282

March 1985 Morbidity Report

Disease	Mor. 1985 Total	1985 to Date	1984 to Date	Most Mor. Cases Reported From These Counties
Amebiosis	4	10	11	Hancock, Jefferson Johnson, Linn
Brucellosis	0	0	1	
Chickenpox	1271	3122	3017	Scattered
Compylobacter	11	30	43	Scattered
Cytomegolovirus	1	1	6	Black Howk
Eoton's Agent infection	1	6	9	Johnson
Encepholitis, virol	4	9	3	Clinton, Linn, Ringgold, Scott
Erythemo infectiosum	0	0	0	
Gostroenteritis (GIV)	2554	6827	6044	Scattered
Giordiosis	26	68	46	Scattered
Hepotitis, A	4	7	7	Buchonon, Polk, Scott
Hepotitis, B	9	26	32	Scattered
Hepotitis, Non A-B	2	5	7	Morion, Scott
Hepotitis type unspecified	1	4	4	Keokuk
Herpes Simplex	96	246	227	Scattered
Herpes Zoster	0	0	0	
Histoplosmosis	2	2	3	Dubuque, Poge
Infectious mononucleosis	23	56	66	Scattered
Influenzo, lob confirmed	92	156	106	Scattered
Influenzo-like illness (URI)	6063	18563	23287	Scattered
Legionellosis	1	2	0	Woodbury
Molorio	0	0	1	
Meningitis				
oseptic	3	9	9	Iowo, Linn
bocteriol	6	36	34	Block Howk, Linn, Polk
meningococcol	1	4	13	Linn
Mumps	3	5	13	Polk, Winneshiek
Pertussis	0	1	3	
Robies in onimols	10	44	37	Scattered
Reye Syndrome	1	2	1	Dollos
Rheumotic Fever	0	0	0	
Rubello (Germon meosles)	0	0	0	
Meosles	0	0	0	
Solmonellosis	20	33	59	Scattered
Shigellosis	5	7	15	Alomokee, Bremer, Cerro Gordo, Polk
Toxic Shock Syndrome	2	5	4	Johnson, Polk
Tuberculosis				
totol ill	6	20	20	Scattered
boct. pos.	6	18	15	Scattered
Typhoid Fever	0	0	0	
Venereol diseoses:				
Gonorrheo	392	1081	1115	Scattered
Syphilis	4	11	10	Cerro Gordo, Johnson, Polk, Scott

Other Non-Reportoble Diseoses: Ascoris — 1, Webster; Chlomydio — 2, Johnson; Clonorchis — 2, Von Buren; Ureoplosmo Ureolyticum — 1, Henry, 7, Johnson, 1, Woshington.

Medical Developments

NEWS/PRODUCTS, PROGRAMS, ETC.

NEW INHALER FOR BRONCHOSPASM — Proventil® (albuterol) Inhaler is available from Schering Laboratories for prevention of exercise-induced bronchospasm, as well as for the treatment of all forms of bronchospasm. Albuterol is approved by the U.S. Olympic Committee for participating athletes. The recommended usage is 2 puffs of the aerosol taken approximately 15 minutes before exercise.

APPROVED BY FDA — Brethaire® (terbutaline sulfate), a bronchodilator, is now available in the form of an aerosol from Geigy Pharmaceuticals. Although Brethaire® is being introduced in the United States for the first time, its safety and effectiveness have been demonstrated worldwide since 1971 in an estimated 1 million patients.

NEW BROCHURE ON DIALYSIS — The National Kidney Foundation recently published a new brochure entitled, NUTRITIONAL CONSIDERATIONS FOR THE PATIENT BEFORE THE INITIATION OF DIALYSIS. This brochure is specifically designed for use in the physician's office as a brief overview of the types of nutritional modifications commonly encountered obtained through local affiliates of the National Kidney Foundation. For further information contact the National Kidney Foundation, 2 Park Avenue, New York, N. Y. 10016. Phone 212/889-2210.

SCHERING INTRODUCES — Lotrimin lotion 1%, brand of clotrimazole, USP, is the most recent addition to the Lotrimin line offered by Scher-

(Please turn to page 234)

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ing Laboratories. This topical antifungal product, available in a 30 ml plastic bottle, should be applied to the affected area twice daily.

RECENT BOOKS

Aronson, Virginia, 1984, *Thirty Days to Better Nutrition*, Doubleday and Co., Garden City, N. Y., $10.95. Covered is nutrition learning program setting forth eating habits for optimum good health.

Bond, Clara-Beth Young, Dobbin, E. Virginia, Gofman, Helen F., Jones, Helen C., and Lyon, Lenore, 1984, *The Low Fat, Low Cholesterol Diet*, Doubleday and Company, Inc., Garden City, New York, $17.95. Another recipe book.

Clark, Reginald M., 1984, *Family Life and School Achievement: Why Poor Black Children Succeed or Fail*, University of Chicago Press, Chicago, Illinois, paperback, $7.95. This research report relates the contribution of family life and attitudes to achievement by the child in school.

Rayburn, William F., Luspan, Frederick P., and Fitzgerald, Jeanne T., 1984, *Every Woman's Pharmacy*, Doubleday and Company, Inc., Garden City, New York, paperback, $9.95. A comprehensive reference for those who desire to know more about drugs commonly suggested and prescribed for women.

Hurst, J. Willis, editor-in-chief, 1984 *Medicine for the Practicing Physician*, Butterworth Publishers, 80 Montvale Avenue, Stoneham, Massachusetts, $80. Dr. Hurst and his colleagues at Emory University School of Medicine have developed a unique reference book for the generalist as well as the subspecialist. The volume is 1,969 pages and develops each subject in a concise manner. Each subject is discussed in terms of — *criteria for diagnosis, clinical manifestations, diagnostic and therapeutic plans, follow-up considerations* and *discussions of epidemiologic background*. Also considered are basic science implications, natural history of the disease, prevention, and a unique final comment on cost containment factors. The references are adequate, the discussions concise, and the coverage appears complete. I recommend this as a quick reference for the busy practitioner. — M.E.A.

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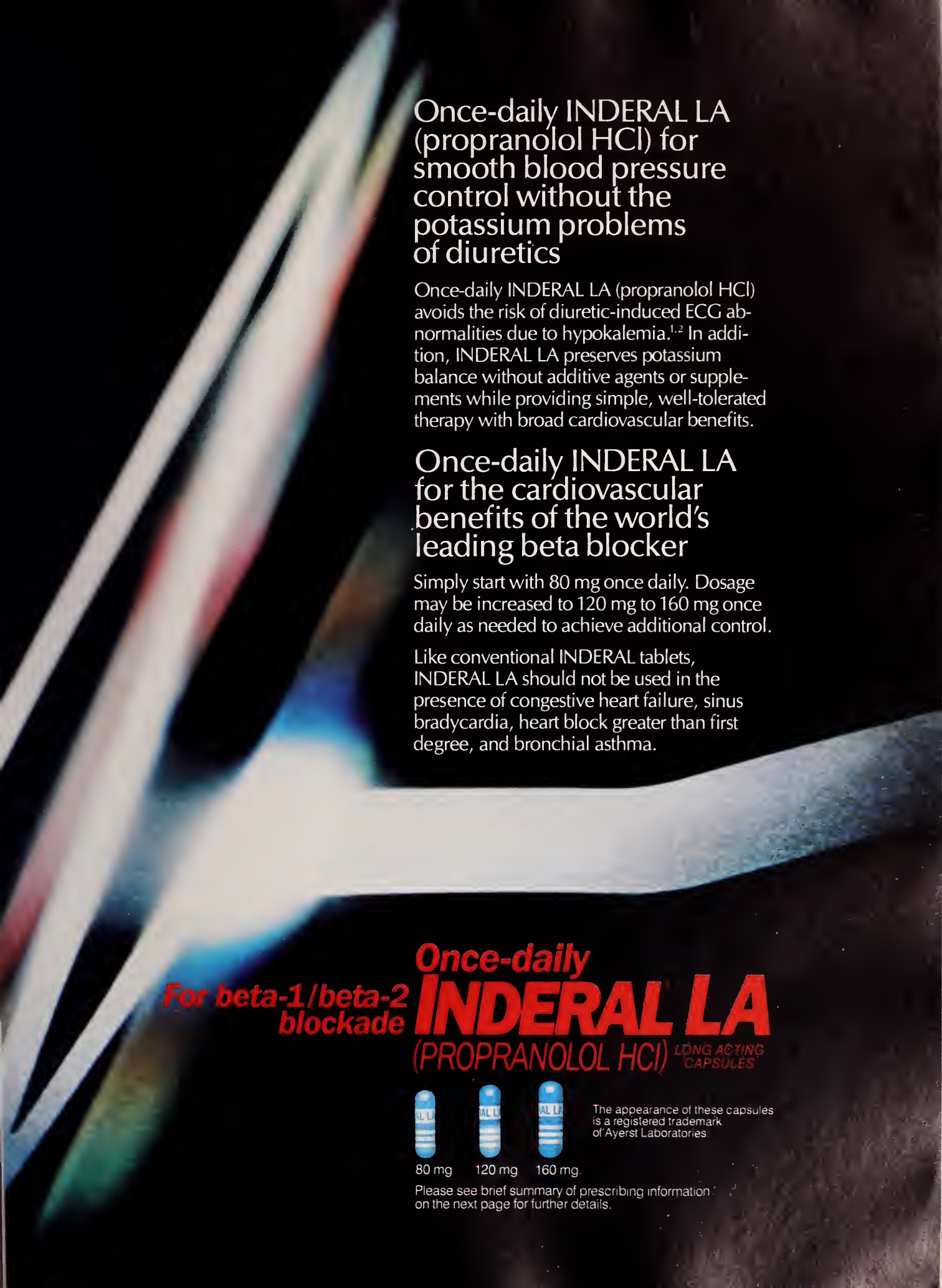
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J-4044 January 1984

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Once-daily INDERAL LA (propranolol HCl) for smooth blood pressure control without the potassium problems of diuretics

Once-daily INDERAL LA (propranolol HCl) avoids the risk of diuretic-induced ECG abnormalities due to hypokalemia.[1,2] In addition, INDERAL LA preserves potassium balance without additive agents or supplements while providing simple, well-tolerated therapy with broad cardiovascular benefits.

Once-daily INDERAL LA for the cardiovascular benefits of the world's leading beta blocker

Simply start with 80 mg once daily. Dosage may be increased to 120 mg to 160 mg once daily as needed to achieve additional control.

Like conventional INDERAL tablets, INDERAL LA should not be used in the presence of congestive heart failure, sinus bradycardia, heart block greater than first degree, and bronchial asthma.

For beta-1/beta-2 blockade

Once-daily

INDERAL LA

(PROPRANOLOL HCl) LONG ACTING CAPSULES

80 mg 120 mg 160 mg.

The appearance of these capsules is a registered trademark of Ayerst Laboratories.

Please see brief summary of prescribing information on the next page for further details.

Once-daily For beta-1/beta-2 blockade INDERAL® LA (PROPRANOLOL HCl) LONG ACTING CAPSULES



The appearance of these capsules is a registered trademark of Ayerst Laboratories

BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION SEE PACKAGE CIRCULAR.)*
INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**
DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg and 160 mg capsules.
CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.
INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension, it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.
CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.
WARNINGS. CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)— PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.
PRECAUTIONS. *General.* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility. Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy. Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose.

There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use. Safety and effectiveness in children have not been established.
ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia, congestive heart failure, intensification of AV block, hypotension, paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia. LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.
DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.
PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

REFERENCES

1. Holland OB, Nixon JV, Kuhnert L: Diuretic-induced ventricular ectopic activity. *Am J Med* 1981,70:762-768. **2.** Holme I, Helgeland A, Hjermann I, et al: Treatment of mild hypertension with diuretics. The importance of ECG abnormalities in the Oslo study and in MRFIT. *JAMA* 1984,251:1298-1299.

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Milton E. Barrent, Clinton, has concluded 34 years' service as athletic physician in the Clinton school system. Dr. Barrent has been honored several times: by the Iowa Football Coaches Association; by the Board of the Central Iowa High School Athletic Association; and by the Iowa High School Athletic Directors Association Award. Dr. Barrent is the only Iowa doctor to receive all 3 awards. . . . **Dr. Richard Walsh** has joined **Dr. Richard T. Ameln,** Ottumwa, to practice dermatology at the Ottumwa Clinic. Dr. Walsh received the M.D. degree at the University of Nebraska Medical School in Omaha, and served a family practice residency at the University of Nebraska and a dermatology residency at the University of Missouri Medical Center. . . . **Dr. Watanachai Sujatanond** has joined **Drs. Opas** and **Puangtong Jutabha** in Sigourney. Dr. Sujatanond received his medical education at Chiengmai University in Thailand, and served his general surgery residency at St. Louis City Hospital in St. Louis, Missouri, and Veterans Administration Hospital in Hines, Illinois.

Dr. Max E. Olsen, Minden, has been named chief of staff at Mercy Hospital in Council Bluffs. Other officers named to Mercy's medical staff include **Dr. Behrouz Rassekh,** presi-

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dent-elect; and **Dr. Gary Leitch**, secretary-treasurer. Both are Council Bluffs physicians. . . . **Dr. Eileen Biggs** has entered family practice in Nashua. A native of Nova Scotia, Dr. Biggs received the M.D. degree and interned at Dalhousie University in Halifax; took postgraduate work in Paris and Harvard Medical School. Dr. Biggs formerly was in family practice in Guysborough, Nova Scotia. . . . New medical staff officers at Mercy Hospital in Cedar Rapids are **Dr. William B. Galbraith**, president; **Dr. Whealen Koontz**, president-elect; and **Dr. Robert J. Brimmer**, secretary-treasurer. All are Cedar Rapids physicians. . . . **Dr. Donald C. Young** was a recent guest speaker at the Marshalltown Rotary Club. Dr. Young discussed the health care issues Iowa is facing. . . . **Dr. Ronald R. McHose** has joined **Dr. E. E. Lister** in family practice at Dallas Center. Dr. McHose is a graduate of the University of Osteopathic Medicine and Health Sciences and had a family practice residency at Iowa Lutheran Hospital in Des Moines. . . . **Dr. Michael E. Abrams** has been named president of the Polk County Medical Society and **Dr. Byron Augspurger**, secretary-treasurer. Both are Des Moines physicians.

Dr. Norman L. Krueger, longtime Casey physician, is retiring. Dr. Krueger received the M.D. degree at the University of Iowa College of Medicine. Following World War II military service, he served a pathology residency in Duluth, Minnesota and later an internal medicine residency in Milwaukee, Wisconsin. Dr. Krueger began family practice in Casey in 1960. . . . **Dr. Amado G. Chanco, Jr.**, Mason City, has been elected president of the medical staff at St. Joseph Mercy Hospital in Mason City. Departmental chairmen and secretaries elected are — Anesthesiology, **Dr. Donald G. Wiltse**, chairman and **Dr. Merwyn E. Larson**, secretary; Family Practice, **Dr. S. C. Gangsei**, chairman and **Dr. Jon R. Yankey**, secretary; Medical, **Dr. Byron T. Beasley**, chairman and **Dr. Ronald M. Larsen**, secretary; Obstetrics/Gynecology, **Dr. John M. Baker**, chairman and **Dr. Thomas R. Gilman**, secretary; Pediatrics, **Dr. John C. Justin**, chairman and **Dr. Wilmer**



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G. Garrett, secretary; Radiology, **Dr. Benjamin J. Broghammer,** chairman and **Dr. Charles B. Wilmarth,** secretary; and Surgery, **Dr. Steven H. Schurtz,** chairman and **Dr. Philip R. Caropreso,** secretary. . . . **Dr. Paul D. Knouf,** Rochwell City, was named president of the medical staff at Stewart Memorial Hospital; **Dr. Linda M. Iler,** Lake City, vice president; and **Dr. Donald L. Skinner,** Lake City, secretary. . . . **Dr. Douglas Hachfeld** has opened a psychiatric practice in Mason City. Dr. Hachfeld received the M.D. degree at the University of Minnesota School of Medicine and served his psychiatry residency at Winnebago Mental Health Institute in Oshkosh, Wisconsin.

Dr. George T. Kappos has been elected chief of staff at Iowa Lutheran Hospital in Des Moines. Other officers are **Dr. John M. Grzbowski,** vice chief of staff; **Dr. John H. Zitergruen,** secretary; and **Dr. Marc A. Ewers,** treasurer. All are Des Moines physicians. . . . **Dr. Horst Blume,** Sioux City, was recognized at the 1984 meeting of the Academy of Neurological and Orthopedic Medicine and Surgery for a paper presented at the association's 1983 convention. The paper was co-authored by Dr. Blume and a Chicago physician.

DEATHS

Dr. Cornelius Maris, 82, longtime Sanborn physician, died March 12 at the Sheldon Community Hospital. Dr. Maris received the M.D. degree at the U. of I. College of Medicine and interned at Lyingin Hospital in Chicago. He began medical practice in Sanborn in 1929, and remained until his retirement February 11, 1985. He was a member of the American Academy of Family Physicians; American Association of Railroad Surgeons and life member of the Iowa Medical Society.

Dr. Paul T. Meyers, 79, former Bloomfield physician, died January 8 in Lake Jackson, Texas. Dr. Meyers received the M.D. degree at the U. of I. College of Medicine; interned at St. Luke's Methodist Hospital in Cleveland, Ohio; and served his radiology residency at Bellevue Hospital and Memorial Sloan Kettering Hospital in New York City. He joined the Gilfillan Clinic in Bloomfield in 1951, retiring in 1975. Dr. Meyers was a fellow of the American College of Radiology.

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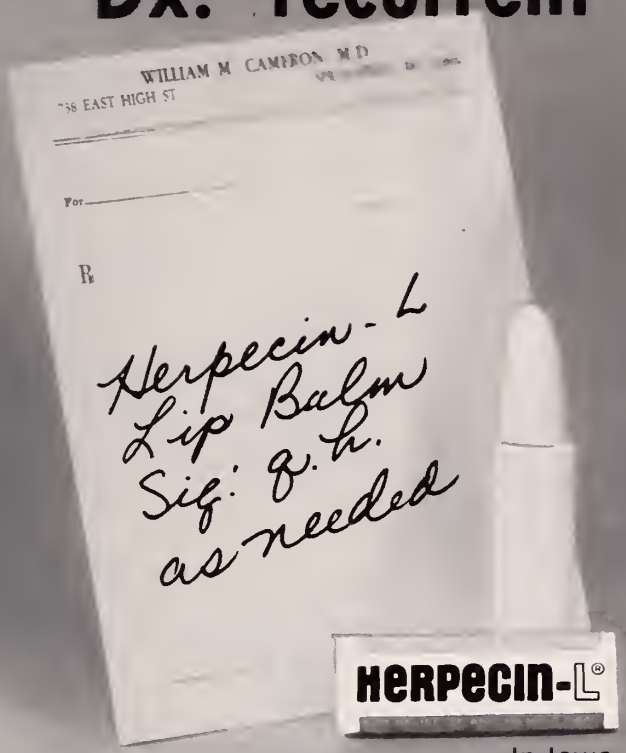
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A Monthly Commentary

IN THE PUBLIC INTEREST

Competition — Sign of the Times

In a 1977 survey by the American Medical Association, U.S. physicians said there was a shortage of medical manpower. By contrast, a 1984 AMA survey found physician respondents reporting a surplus of U.S. doctors. What would change attitudes so dramatically in 7 years?

If your answer is increasing competition you agree with a small, but steadily growing percentage of the nation's physicians. This finding emerged from an AMA survey covering competition and other aspects of health care delivery; the AMA data are compiled in a 1984 booklet called *Physician and Public Attitudes on Health Care Issues*. Three primary elements are prominent in our increasingly competitive milieu: physician supply, alternate forms of health care delivery and the economic conditions.

Physician Supply — 43% of the AMA 1984 survey respondents said there are too many physicians in their communities. Respondents expressed even greater concern about surplus in some specialties; 74% of AMA-surveyed physicians believe there is a current or impending surplus of specialty physicians. Eighty-three percent of the respondents said there is a surplus in the surgical specialties.

Alternate Forms of Health Care Delivery — Regional variations are apparent in the survey answers. Physicians in the West North Central Region (Iowa physicians are included in this region) view hospital outpatient clinics as a major source of competition. By contrast, physicians in the Pacific and East North Central Regions indicate health maintenance organizations (HMOs) are a main competitive force. As a major source of competition, fee-for-service physicians have fallen 7 percentage points in a comparison of last year's survey with an earlier poll. HMOs, independent practice associations (IPAs) and surgicenters have risen 6 to 10 points as competitive elements in the eyes of AMA-surveyed physicians.

Economic Conditions — Patient unemployment during the early 1980s has contributed to increased competition among physicians, according to the AMA survey. Individuals tend to forego medical care if they cannot pay, thus the pool of paying patients shrinks. In 1983, 62% of polled physicians said unemployment had lessened the ability of patients to pay bills. This figure declined 6% over a 1982 physician response to the same question, although its high level still indicates doctors acknowledge the difficult and constricting economy. The West North Central Region follows the national trend. Sixty-one percent of the region's physicians believe unemployment affected their patient's ability to pay bills; it was higher in 1983 with a 73% response to the same question.

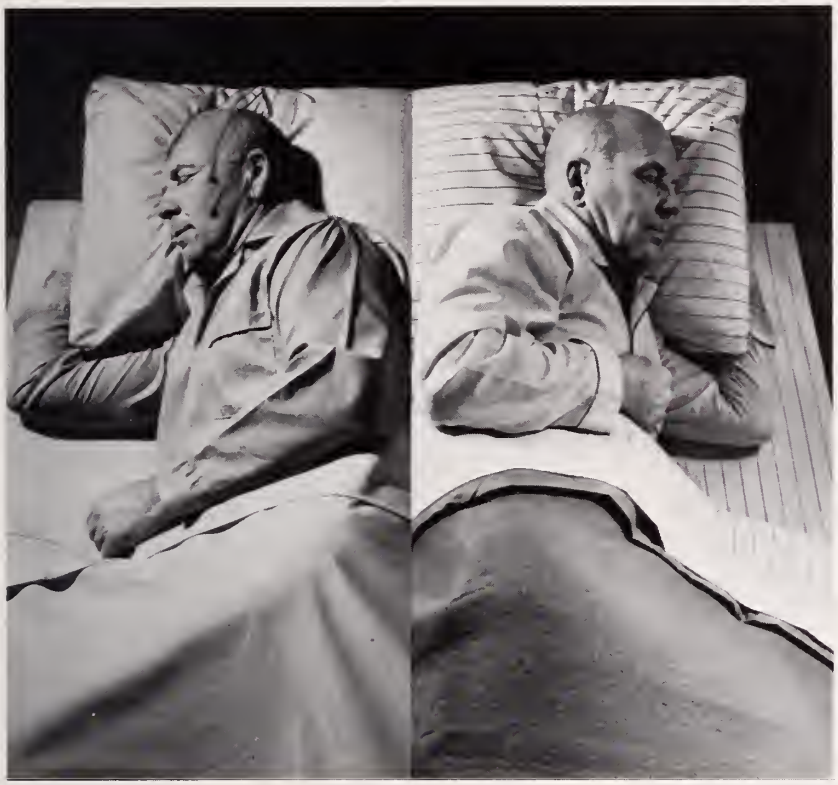
How are physicians dealing with competition? The AMA survey reports an increased number will consider joining an HMO in the future; 33% in 1984 versus 25% in 1983. As in the past, the AMA survey finds physicians under 45 are more likely to consider the HMO, PPO, IPA, etc. options than older physicians.

Competition may make the physician market appear tougher than it was 7 years ago, but figures in the AMA survey are open to personal interpretation based somewhat on regional circumstances. What is interesting to note, these same AMA survey results point out physicians still prefer competition — facing market forces — over regulation, by 3 votes to one.

May 1985

Iowa Medicine

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References: 1. Kales J *et al: Clin Pharmacol Ther 12*:691-697, Jul-Aug 1971. **2.** Kales A *et al: Clin Pharmacol Ther 18*:356-363, Sep 1975. **3.** Kales A *et al: Clin Pharmacol Ther 19*:576-583, May 1976. **4.** Kales A *et al: Clin Pharmacol Ther 32*:781-788, Dec 1982. **5.** Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc 27*:541-546, Dec 1979. **6.** Kales A, Kales JD: *J Clin Pharmacol 3*:140-150, Apr 1983. **7.** Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther 21*:355-361, Mar 1977. **8.** Zimmerman AM: *Curr Ther Res 13*:18-22, Jan 1971. **9.** Amrein R *et al: Drugs Exp Clin Res 9*(1):85-99, 1983. **10.** Monti JM: *Methods Find Exp Clin Pharmacol 3*:303-326, May 1981. **11.** Greenblatt DJ *et al: Sleep 5*(Suppl 1):S18-S27, 1982. **12.** Kales A *et al: Pharmacology 26*:121-137, 1983.

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Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

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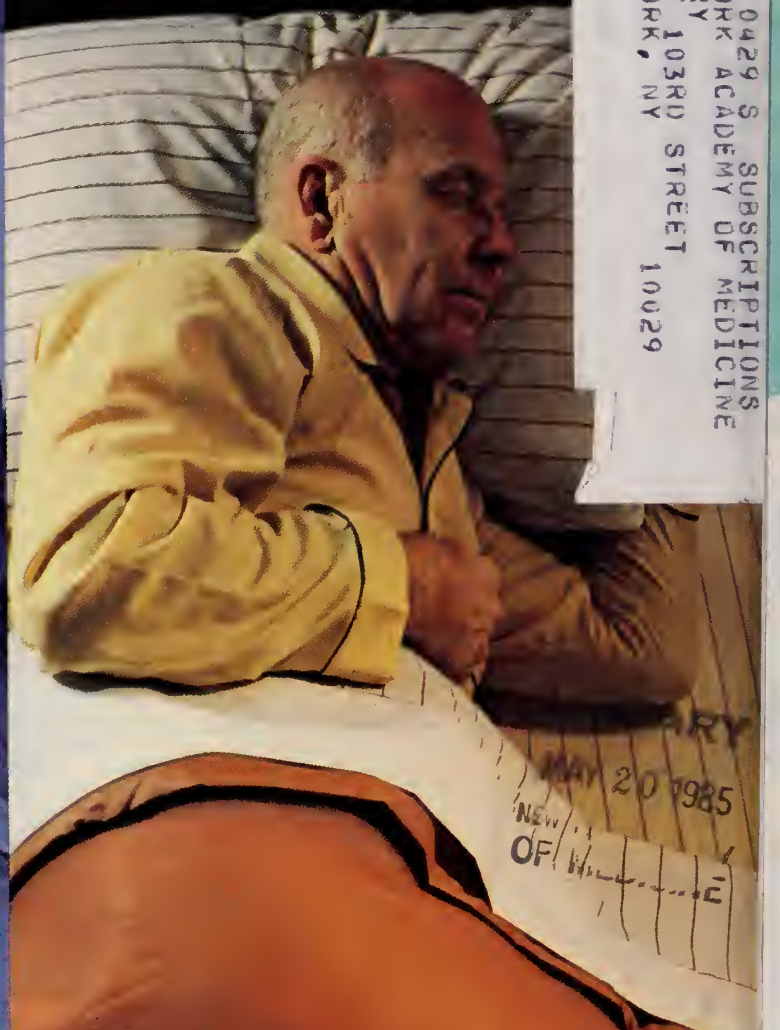
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IowaMedicine

June 1985 Journal of the Iowa Medical Society

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June 1985

IowaMedicine

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Journal of the Iowa Medical Society

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ABOUT THE COVER



It is traditional for each succeeding president of the Iowa Medical Society to become custodian of the official medallion. The most recent passing of the medallion occurred April 21 when John E. Tyrrell, M.D. (right on cover), concluded his term as president and installed Emmett B. Mathiasen, M.D., as his successor. The remarks of Drs. Tyrrell and Mathiasen to the 1985 IMS House of Delegates appear in this issue — along with comments from AMA President Joseph F. Boyle, M.D.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and sociaecanamic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Maines, Iowa 50265.

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PRESIDENT'S PRIVILEGE

TO TAKE A HARD LOOK!

You will note there is a new tenant in this space. I hope what is said in the coming issues will arouse your interest. Professional liability is a topic that arouses us immediately.

Back in 1983 there was an independently conducted survey of Iowans with several questions on this subject. Sixty-five percent of the respondents said there should be a limit on malpractice awards; 34% said there shouldn't. The Iowa response favoring a cap exceeded by four points the 61% nationally who said there should be a limit.

In another question, a majority of Iowans (58%) said the amount of money awarded patients by juries is usually too much. And, correspondingly, a majority (56%) said people who sue physicians for malpractice are looking for an easy way to make some money.

If this is the perception of a substantial number of Iowans, what can we do to see that these sentiments are reflected in public policy?

That's the question a new Iowa Medical Society Task Force on Medical Liability will examine in the next several months. This task force was authorized in late April by the 1985 IMS House of Delegates. It is to be headed by the Society president with physician members chosen based on interest, specialty and geography.

Open hearings are planned by the task force during July in Cedar Rapids, Des Moines and Sioux City. From all its data gathering, the task force will assemble a report with recommendations on how the Society should promote improvement in current conditions.

This is a further attempt by your Iowa Medical Society to deal with one of the most complex problems of our times. It follows our inaugural earlier this year of the IMS-sponsored IPMIT/AMACO Professional Liability Insurance Program. Your interest and participation in this arena are extremely important.

Emmett B. Mathiasen M.D.

Emmett B. Mathiasen, M.D.
President

IMS Delegates Challenged by AMA President

The Patient Comes First — A Commitment We All Share

JOSEPH F. BOYLE, M.D.
Los Angeles, California

When he assumed the AMA presidency, Dr. Boyle asked physicians to rededicate themselves to this ethical principle — the patient comes first. In remarks made to the 1985 IMS House of Delegates, Dr. Boyle expresses gratification over the response he has received from physicians expressing support for this recommitment to the service of humankind.

In its last session, the U.S. Congress reneged on a promise made to the elderly and the disabled 20 years ago. Congress said we are going to change the rules: *We told you we would reimburse you for needed medical service. Now we are going to freeze the amount we will reimburse you. At the same time, we will create two different classes of patients; patients of physicians who will agree to participate and patients of physicians who will not participate.*

This Congressional action is both callous and cynical. Our lawmakers withdrew from an obligation to pay for about $2 billion in charges already accumulated between July 1, 1983, and June 30, 1984. To distract attention from this discrepancy, they attempted to shift that obligation to U.S. physicians.

At the same time, the American Medical Association asked physicians a few months earlier to freeze fees voluntarily for all patients, not just Medicare patients. Physicians were asked to consider — more seriously than ever — their patients' financial needs as well as their medical problems in setting charges. We are proud that 80% of the physicians in this country did comply with this request. We are also proud of those physicians who agreed to sign participating agreements; less than 20% of them did so in their own personal financial interest. The overwhelming majority of American physicians were simply trying to help their elderly patients, patients who are Medicare beneficiaries.

On Accepting Assignment

It is clear that this business of assignment and nonassignment, participating or not participating, is an absolute strawman. When Congress enacted this legislation, about 30% of physicians were routinely submitting assignment on 100% of their patients. In the vicinity of 80%, doctors were accepting assignment on a selective basis some of the time, and slightly over 50% of all submitted charges were on an

Dr. Boyle is president of the American Medical Association. This paper is based on remarks presented to the Iowa Medical Society House of Delegates on April 21, 1985.



assigned basis already. Since last July, the percentage of physicians accepting assignment 100% of the time is up by almost one-third. Now about 5% more are accepting assignment some of the time, and the percent of charges submitted on an assigned basis is now nearly 70%.

What's happened in the interim? Today, the American Association of Retired Persons, and other organizations representing senior citizens' councils, realize it is not in the best interest of their members to continue with a reimbursement freeze. They are beginning to understand that assignment has nothing to do with physician reimbursement. These citizen groups have been estranged from us as Congressional debates over assignment and physicians' fees have occurred. Now they realize we must work together.

At the same time, we realize we have other serious challenges as we try to meet the public needs and expectations. During the past several years, we have noted a gradual decline in public confidence in medicine. There has been a decline in the esteem people hold of the institutions to whom they look for protection of interests. While medicine is still near the top, or at the top, in almost every survey of public attitudes, that ranking has declined precipitously. While Congress demonstrated its lack of sensitivity in 1984, we are proud that physicians did not lose theirs. They continued to accept their obligations to deal compassionately with their patients.

Important Public Attitudes

However, we need to look beyond the surveys. We need to address public attitudes today. We know fewer than 3 of 10 people think doctors in general charge reasonable fees. No more than 2 of 10 people think doctors really try to hold their charges down. Almost 4 of 10 people harbor the notion that physicians think they are better than others. About one-third of people surveyed agree doctors spend enough time with them, explain their problems to them adequately and really care.

The implications of public opinion are enormous. A hostile public produces a hostile legislature; a hostile legislature can pass strange legislation, most of which we do not want.

However, a different picture and potential emerge when we ask people about their own doctors. Today 80 to 90% of people give their own doctors high grades in each of these same areas. They believe their own doctor charges a reasonable fee, is concerned, spends enough time and does not act as though he or she is better than everyone else. But there is a message for all of us — *time is running out*. Even

those attitudes are beginning to change and erode. We must realize public attitudes are a culmination of experiences, all the things to which a person is exposed. We know there are physicians among us who really do not spend enough time with their patients. These physicians may be so caught up in medical care delivery problems that they are becoming less compassionate and more contemplative about their own futures. We need to make certain our colleagues understand that our relations with the people we serve is seriously threatened.

The reelection of Ronald Reagan last year provides us evidence of the chance we really have. For at least a year and a half before President Reagan was renominated, I believed he would be reelected by an overwhelming majority. I had this opinion not because the public believes Ronald Reagan to be a financial wizard who turned the economy around. It is not because they believe him to be a knight on a white horse protecting us from the hordes of Mongols coming over the ice cap to invade the western world. Rather, I think the people voted for Ronald Reagan because they believe he is a good man. We are at an historical point where people are looking for leadership and a return to simple morality.

Erosion In Confidence

There are judges taking bribes of $25,000 or more a year. There are people in business accepting kickbacks and embezzling funds. There are politicians engaged in all kinds of questionable practices. People have lost confidence in law and religion. People believe they have lost control of their lives in this high tech era. They are looking for someone to turn the tide. In the last 30 or 40 years, what used to be wrong became not so bad, then maybe okay; today it is accepted as right — when we know it is not. If Moses came down from the mountain tomorrow, he would not bring 10 commandments; he would bring 10 guidelines. And, whereas God said, "Thou shalt not kill." Today it might be phrased something like this: *The antihuman existence being exhibited by some members of our society is not in the best interest of all citizens and should be discouraged at every turn.*

So, we have an opportunity to lead if we are willing to commit ourselves. There are pressures from HMOs, from PPOs, from professional liability; the interference of the courts in our lives and the interference of the federal and state governments. At the same time, we are a profession with a future. We can restore our public confidence and esteem if we make it clear we will not submit to others. Medical judgments belong appropriately in our profession. We need to act like a profession that believes in itself and its future. Believe me, the public has a need to believe in us.

At the time of my inauguration as AMA president, I asked those present to rededicate themselves to a professional ethic. This professional ethic says, quite simply, *the patient comes first.* I asked if I could say on their behalf *that we have examined ourselves and found again that our lives are dedicated to the service of humankind?* Could I say *we have examined ourselves and we will remain committed to caring for people?*

Technology is a tool we must use as its masters, not as its slaves. Though the opportunity may be present to enrich our purse, we will opt instead to enhance our lives as we seek to enrich the lives of those we serve and to those who place their well-being in our hands. We will stand prepared to care for all people, simply because we care.

Profession Responds Positively

The response at that moment was extremely positive. The address was published in the August 10 issue of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. Subsequently, I received literally thousands of letters from physicians all over this country, all with one message. That message was thank you. One doctor in a southeastern state paraphrased what all the others were saying when he wrote, "I had begun to believe that I might have to succumb to what I consider threats and bribes. Now, I know I can rededicate myself to the ethic that led me to medicine in the first place — caring for people."

As we forge ahead scientifically, we see prospects of genetic manipulation, in vitro fertilization, and surrogate parenting. We must respond to suggestions that perhaps the old and the very infirmed would favor everyone if they would return to dust as soon as possible. I will suggest to you that we had better test the limits of our own commitments to the individual. As we try to respond to those questions of "when does life begin" and "who has the right to die and under what circumstances," I suggest we want these profound decisions to come from physicians and physician associa-

tions, not from the courts or the federal congress.

Interaction Must Be Personal

Is this interaction between doctors and patients something cold and plastic or is it something that is very personal? It is very personal. Let me illustrate: Back in the early 1960s, I was asked to see a patient, the daughter of an internist in Los Angeles. Their only child — a beautiful girl and I mean beautiful beyond description. She had an empathy, compassion, and sensitivity that would literally grab your heart just walking into the room to talk with her. At the age of 16 she was second in her class at UCLA, was an accomplished concert pianist, a published poet; and she had a malignancy that involved her myocardium and pericardium. She was dying. Her father could not accept that the pride of his life was ill — much less with a malignant disorder. Her mother understood quite well. About 3:30 one morning, I was in her room doing a pericardiocentesis because she was having tremendous difficulty breathing, just barely out of shock. As I finished, she looked up at me and said, "I am dying, am I not, Dr. Joe?"

I said, "Yes, Julia, you are."

She said, "There's nothing you can do about that, is there?"

And I said, "No, Julia, there is not."

Then she said, "Well then, Dr. Joe, would you do me a favor? Help me. The next time this happens, help me make Daddy understand. Let me say good-bye to Mommy and then let me go."

Today we could have cured Julia's malignancy. But it does not matter because she will live forever in a medical system that cares.

There are some who would prefer not to raise so many fundamental questions all at once, much less take a hard position or try to find the answer. But I will submit that I was elected to be the president of a profession of individuals who believe in principles and ethics. If the evidence I have received from all over this country is indicative, I can assure you we have a caring profession. We have a future if we will lead. God love you all.

L. J. O'BRIEN, M.D. 1909-1985

PRESIDENT, IOWA MEDICAL SOCIETY — 1972

Dr. Lyal J. O'Brien was born in Lynxville, Wisconsin. He earned a Ph.D. in biology and philosophy and was an instructor at St. Thomas College in St. Paul, Minnesota. Dr. O'Brien received his M.D. degree from the University of Minnesota in 1949, interned at St. Louis University, and served his surgical residency at the University of Iowa. Prior to coming to Fort Dodge in 1947, he was an instructor in surgery at the University of Iowa College of Medicine. He actively practiced general surgery in Fort Dodge until his retirement in 1979. During those years, he was associated with several physicians in a group practice, including Dr. John F. Collins, Dr. Joseph Donohoe, Dr. Norman Schacht, Dr. Maurice Kraushaar, Dr. Gary Bloom, Dr. Paul Loeffelholz, and Dr. John Vanderheiden. Dr. O'Brien served as president of the Iowa Medical Society, the Iowa Cancer Society, and the Webster County Medical Society. He was elected to the American College of Surgeons.

Dr. O'Brien had retired to Chesterfield, Missouri, and died in a nursing home in that community of Alzheimer's disease. He is survived by his widow, Denise Bagan O'Brien; sons: Dennis, Kevin and Terrence, all of St. Louis, Missouri, and Patrick, Minneapolis, Minnesota; daughters: Colleen Rosenbach, Gettysburg, Pennsylvania; Kathleen Higley, St. Louis, Missouri; Maureen Starkovitch, Omaha, Nebraska; and 11 grandchildren.

A memorial mass was read at Priory Chapel, St. Louis, on April 1, 1985, and his body was donated to St. Louis University Medical School. Memorial contributions may be sent to the St. Louis Chapter of the Alzheimer's Disease Association, 1155 Francis Place, St. Louis, Missouri 63117. — *John F. Kelly, M.D., Fort Dodge, Iowa.*

Retiring President Calls For

Restoring Our Image

JOHN E. TYRRELL, M.D.
Manchester, Iowa



To hold the respect of our patients and our fellow citizens, we need to be active in providing community leadership. So said retiring Society President John Tyrrell in comments to the 1985 IMS House of Delegates. Iowa physicians must be part of the effort to address local health concerns.

As YOUR OUTGOING PRESIDENT, I would like to thank you for the privilege and honor of representing the Iowa Medical Society for the past year. Working over the past 12 months with the elected leadership and staff of the society has been a rewarding experience. My only regret is that I could not have done more for the profession of medicine caught in an environment of change.

The challenges which face medicine appear to become more numerous and more menacing each year. The problem of costs has been compounded as the result of a determined effort by business and government to reduce their health care expenditures. The increasing number of professional liability claims and the increased size of awards are putting pressure on physicians to diagnose more quickly, more precisely, and with more expensive technology. Public confidence in physicians is decreasing. Legislators find it easy to disregard our advice. Too many fine clinicians are only that. They are not involved in their communities where they can be seen as fine human beings. Physicians tend to be compulsively driven to long hours of work and a high rate of income.

No one has the answer to all of these problems, but after a year of discussions and meetings and the opportunity to learn from a host of knowledgeable people, let me suggest some things.

First, we must strengthen the doctor-patient relationship. It is our strongest asset. We need to care more, be better listeners, share our humanity with our patients. Let them know how much we appreciate the privilege of being

(Please turn to page 256)

These comments were offered by Iowa Medical Society President John E. Tyrrell, M.D., on April 20, 1985, at the Annual Meeting of the House of Delegates. Dr.Tyrrell concluded his term of office April 21.

Incoming President Stresses

Membership and Communication

EMMETT B. MATHIASEN, M.D.
Council Bluffs, Iowa



In today's complex medical care environment, the patient must know "what's going on" to the fullest extent possible. This emphasis on communications was central in April inaugural remarks of the new IMS president. Communication by physicians with all parties involved in health care is important — but it is crucial where patients and their families are involved.

THANK YOU for the opportunity to serve as president of the Iowa Medical Society. It is a great honor and I accept it with a desire to serve you as well as the patients we all serve.

Based on the actions taken by the 1985 House of Delegates, a busy year lies ahead. Speaking for your IMS officers, I assure you we will do our utmost to make this a productive year. Many of our problems are old ones with new twists — professional liability, membership, third party intrusion, high health care costs, DRGs, manpower, nonphysician health care providers, alternate delivery systems and so on.

I have been involved in medicine for many years and have seen many changes. Some have been good and some bad. Where circumstances are not so good, we need to strive for further change — always with the intent of assuring access to quality care! For those that are good, we need to adapt to change. I think I must be adapting. I had something good to say about DRGs, IFMC, HPCI, nurse coordinators, Medicare and Medicaid, and lawyers *all in the same week.*

Dramatic Advances In Care

In the past several years, we have seen dramatic advances in diagnosis and treatment. New technological procedures are bringing modern miracles — organ transplants, microsurgery, pacemakers and so forth, to name only a few. When we discuss the future of medicine let us not make it gloomy and negative. Even if all intruding parties make a mess of the health system, patients will continue to need good medical care. As physicians, we must continue to give good medical care.

(Please turn to page 256)

These remarks were presented by Dr. Emmett B. Mathiasen on April 21, 1985, following his installation as president of the Iowa Medical Society.

RESTORING OUR IMAGE

(Continued from page 254)

their physician.

Community Participation

Then as a community of physicians, we must address the health problems of the community in which we live and practice. We need for our local leaders to know of our concern. We must work with them for the community good.

Our participation in community problem solving will give us the credibility we will need in the future. If our patients and our community leaders trust and believe in us, they will follow our lead in the quest of quality care. But they must understand and appreciate what quality care is — we must tell them about quality, individually and in the community setting. Do I dare ask when you last appeared before a group to discuss the problems of providing quality care at a reasonable cost?

Building community support for quality health care will not be easy but it must be done. As with the ancient Chinese proverb, *even the longest journey must begin with a single step.*

Do you recall the folk song . . . *Let there be peace on earth and let it begin with me.* The cause of quality health care in our communities must begin with you and me.

As physicians, we are beneficiaries of a priceless heritage, but its image today is not what it once was. We can and we must restore that image.

Again, thank you for the opportunity to serve Iowa Medicine. Medicine is a high calling, demanding our very best. The stakes are high but the problems can be solved. I wish you well in the deliberations of this House of Delegates and upon your return to your communities.

MEMBERSHIP AND COMMUNICATION

(Continued from page 255)

Two subjects of particular importance are *membership* and *communication.* Our membership is high — 85% is good — 100% is better. In these days of change, there is nothing more important than organized medicine. I know my comments are to the wrong group — you are here, you belong, so I am asking you to contact the nonmembers in your area. Only through county, state and national groups of organized medicine will appropriate legislation, education, cost-containment, research, public health and future planning be forthcoming.

We must also concentrate on communication. This is probably our most important function after the actual delivery of medical care. We need to communicate with legislators — local, state and federal. We need to communicate with representatives of business and industry, other providers, third party carriers, our peers, the IFMC, HPCI and, most importantly, with our patients. Today we have patients with multiple problems, and thus we have multiple physicians attending them; the patient may be left with inadequate knowledge of "what's going on?" Most complaints from patients about physicians result from lack of communication.

The Physician-Patient Relationship

Our message to those with whom we communicate should be the same. At the heart of medical practice is the physician-patient relationship; where one seeks help and the others offer it the elements of understanding and compassion need to have priority status.

As physicians, we must be our patients' primary advocate, and we must never relinquish our responsibility to serve them and their best interests.

This is a very memorable day for me; as I begin my year as president, I call your attention to a sign placed on the wall of an old saloon in the Klondike. It read "Don't shoot the piano player, he is doing the best he can."

I promise you the same — I'll do the best I can.

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Hormoz Rassekh, M.D.

QUESTIONS AND ANSWERS



HEALTH POLICY AGENDA

Dr. Rassekh is one of several Iowa physicians participating in the "Health Policy Agenda for American People" project initiated by the American Medical Association. Dr. Rassekh is a past IMS president and is now involved in several projects at the national level. He offers some insights here on the progress of HPA.

You are involved in a most ambitious national study relating to health care delivery. It's called the "Health Policy Agenda for the American People." Tell us briefly about this project?

The Health Policy Agenda was initiated by the American Medical Association in 1982 to seek a comprehensive and objective plan to meet the health care needs of the citizens of the United States. It is a 4-year cooperative effort involving more than 150 organizations — professional, business, industry, insurance, labor, consumers, government and so on.

How is the HPA organized? Is it possible for so many groups with differing perspectives to come together?

There are six "work groups" composed of 20 to 30 individuals. These units have been engaged in the development of principles and issues. Then an advisory committee of representatives from participating organizations is reviewing the draft principles and issues. A final point of consideration is a 35-member steering committee chaired by AMA President Joseph Boyle, M.D. Participants at each level have been asked to approach the issues by setting aside their preconceived biases. It seems to be working out; it has been personally educational and rewarding.

What is your particular assignment? Are there any other Iowa physicians or other Iowans involved?

My participation is as a member of the HPA advisory committee. At a recent meeting we received testimony covering medical science, health professions' education, health resources, delivery mechanisms and processes, payment approaches, etc. Dean John Eckstein, M.D., Iowa City, is on a work group, and John Sunderbruch, M.D., Davenport, is on the advisory committee representing the American Medical Peer Review Association.

The project has been going on for more than two years. When is it expected to be completed? What eventual form will it take?

The final Health Policy Agenda is expected in the summer of 1986. It will be furnished to all participating organizations. It is hoped the policy proposals will form a common basis upon which the various participants can work to shape U.S. health care policy.

What is your personal feeling about the merits of the project? Do you think it will have some substantial value in determining future directions?

HPA is probably the most significant and ambitious project initiated by the AMA. It has

(Please turn to page 275)

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Cervical Metastasis From An Unknown Primary

DENNIS P. PORTO, M.D.,
RICHARD T. FIRKINS, M.D., and
LESTER R. DRAGSTEDT II, M.D., F.A.C.S.
Des Moines, Iowa

Treatment options for carcinoma metastatic to the neck are discussed. A series of 22 cases is reviewed with support given to radical neck dissection under appropriate circumstances. Stress is placed on need for a comprehensive work-up before any invasive neck procedure is undertaken.

TWENTY-TWO cases of carcinoma metastatic to the neck with an unknown primary have been seen at Des Moines Veterans Administration Hospital in a 25-year span. All patients were males between 50 and 75 years of age. All carcinomas were either squamous cell or undifferentiated. Adenocarcinomas were not considered in this study as they seem to behave differently and carry a much worse prognosis.[1] Further, the carcinomas in this study were located in the anterior cervical triangle and a primary tumor was never found in these cases in 14 years of follow-up. Only 1 autopsy was performed and it failed to reveal a primary.

In patients with a possible neck malignancy where no primary can be found, it is most important to secure an adequate history, physical, panendoscopy and random biopsies of the nasopharynx, tongue base and pyriform fossa before any invasive neck procedure is undertaken. This has been stressed by several authors.[1-6, 8] This paper will study the treatment plan chosen after this has been done without evidence of a primary tumor and after histological proof of the metastasis is obtained.

Steckel and Kagan[9] are supported by the authors in the belief that exhaustive searches for a primary may not be warranted. The origin may not be found at autopsy, and if the primary is located, the prognosis is unlikely to be influenced.

Radiotherapy may be the treatment of choice in a cervical metastasis from unknown primary.[2] Another treatment option is functional neck dissection with preservation of major nerves, vessels, and muscle.[7] The radical neck dissection is the optimum therapy, and this attitude is supported in our series.

Eight of the 22 patients studied in this series were considered unsuited for surgery. This

The authors are associated with the Veterans Administration Medical Center, Des Moines, Iowa. Dr. Porto was a first-year surgical resident when this paper was prepared and is now an otolaryngology resident at the University of Minnesota. Dr. Firkins is chief of otolaryngology and Dr. Dragstedt is chief of the surgical service and clinical professor of surgery, University of Iowa College of Medicine.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF JUNE 1985

TABLE I
SURVIVALS
(22 PATIENTS)

Group I Radiotherapy	Group II Surgery	Group III Surgery + Radiotherapy	Group IV None	Group V Surgery Radiotherapy Chemotherapy
1 yeor	14 yrs.	6 yrs.	1 mo.	1.5 yrs.
2 mos.	11 yrs.	10 yrs.	1 mo.	1.7 yrs.
	11 yrs.	1 yr.	1 mo.	
	10 yrs.	8 mos.	1 mo.	
	1.7 yrs.	1 yr.	1 mo.	
	3 mos.	1.2 yrs.	1 mo.	
Av. = 7 mos.	Av. = 8 yrs.	Av. = 3.3 yrs.	Av. = 1 mo.	Av. = 1.6 yrs.

group had an average survival of 2.5 months. Two non-surgical patients survived 2 months and 12 months after being treated with radiotherapy (3,000 rads). Complete survival results are shown in Table I.

The remaining 14 cases were treated for cure. The approach consisted of radical neck dissection with or without radiation therapy (3,000-6,500 rads). Radiation therapy was used primarily for clinical stages greater than N1 and was usually postoperative. Two cases recurred after radiotherapy and were subsequently started on chemotherapy with methotrexate.

The increased survival in patients treated primarily by surgery is understandable. It was expected since radiation therapy was reserved for patients not regarded as surgical candidates. This retrospective study can only evaluate the results of surgery for the primary role it plays in our treatment plan.

Fried *et al.*[2] treated all patients with squamous cell or undifferentiated carcinoma of the neck with unknown primary by giving 6,000-7,000 rads at 1,000 rads/week. They reported 55% "long term" survival in 11 carefully selected patients. In our series, 55% of patients treated with radical neck dissection alone survived at least 10 years. When adding in cases where radiation (3,000 to 6,500 rads) was used adjunctively, a survival of 6 years occurs in approximately 50% of cases.

Those patients unable to receive treatment for cure, Group IV (no Rx), and Group I (radiotherapy) had average survival 1-7 mos. Of those patients treated for cure, Group II (surgery), Group III (surgery + radiation) and Group V (surgery, radiation + chemotherapy) 6 of 14 have already survived more than 5 years.

SUMMARY

No absolute conclusions can be drawn from a small retrospective study. However, it can be inferred that radical neck dissection is a satisfactory method of treating metastasis to the neck from unknown primary. It also suggests that consideration of radiotherapy or functional neck dissection in the first degree curative treatment of such lesions should take this into account.

ACKNOWLEDGMENT

The authors acknowledge Rita Clark, Tumor Board secretary, Veterans' Administration Medical Center, Des Moines, Iowa, for assistance in compiling the statistics contained in this paper.

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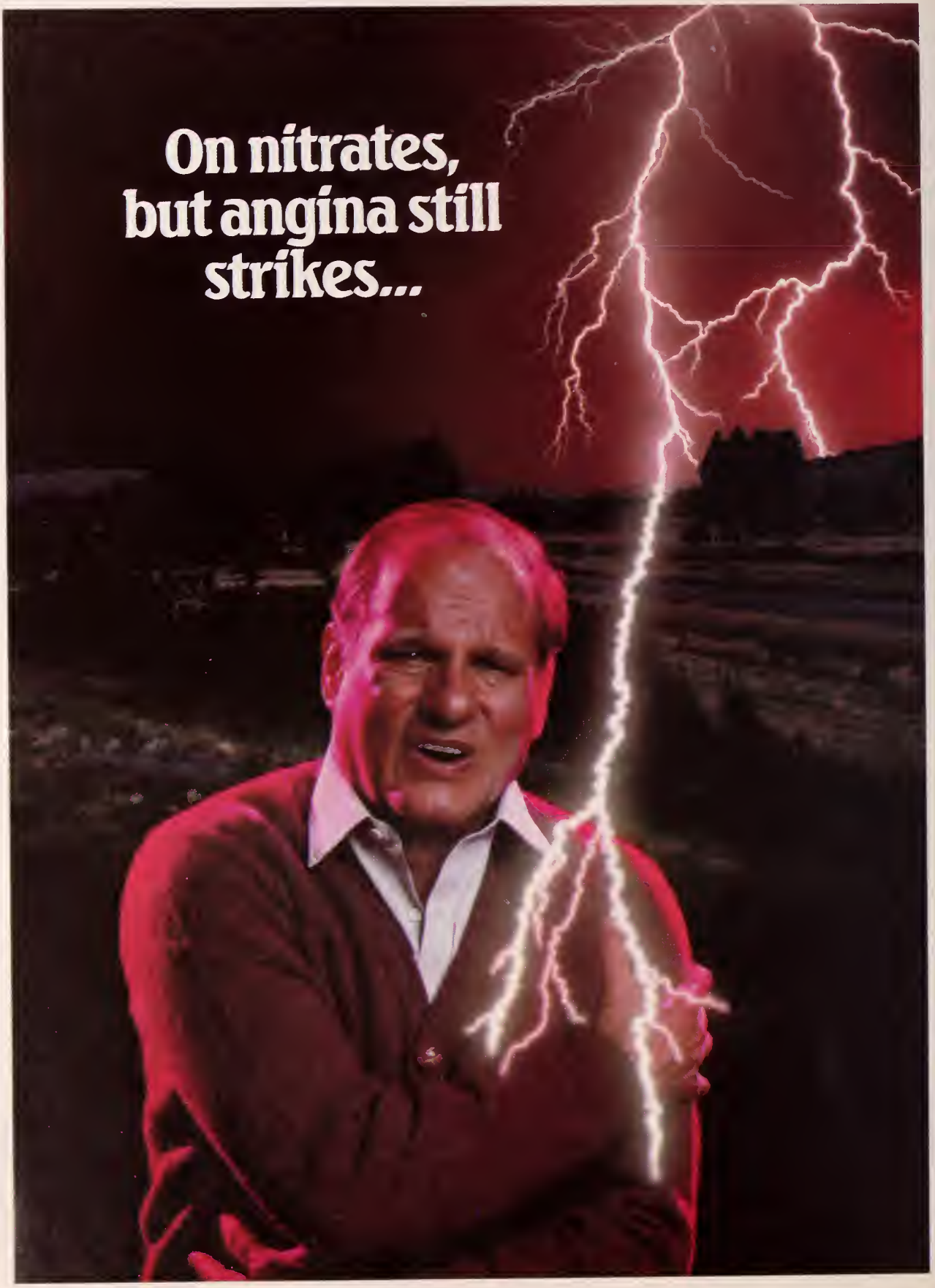


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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment, however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. 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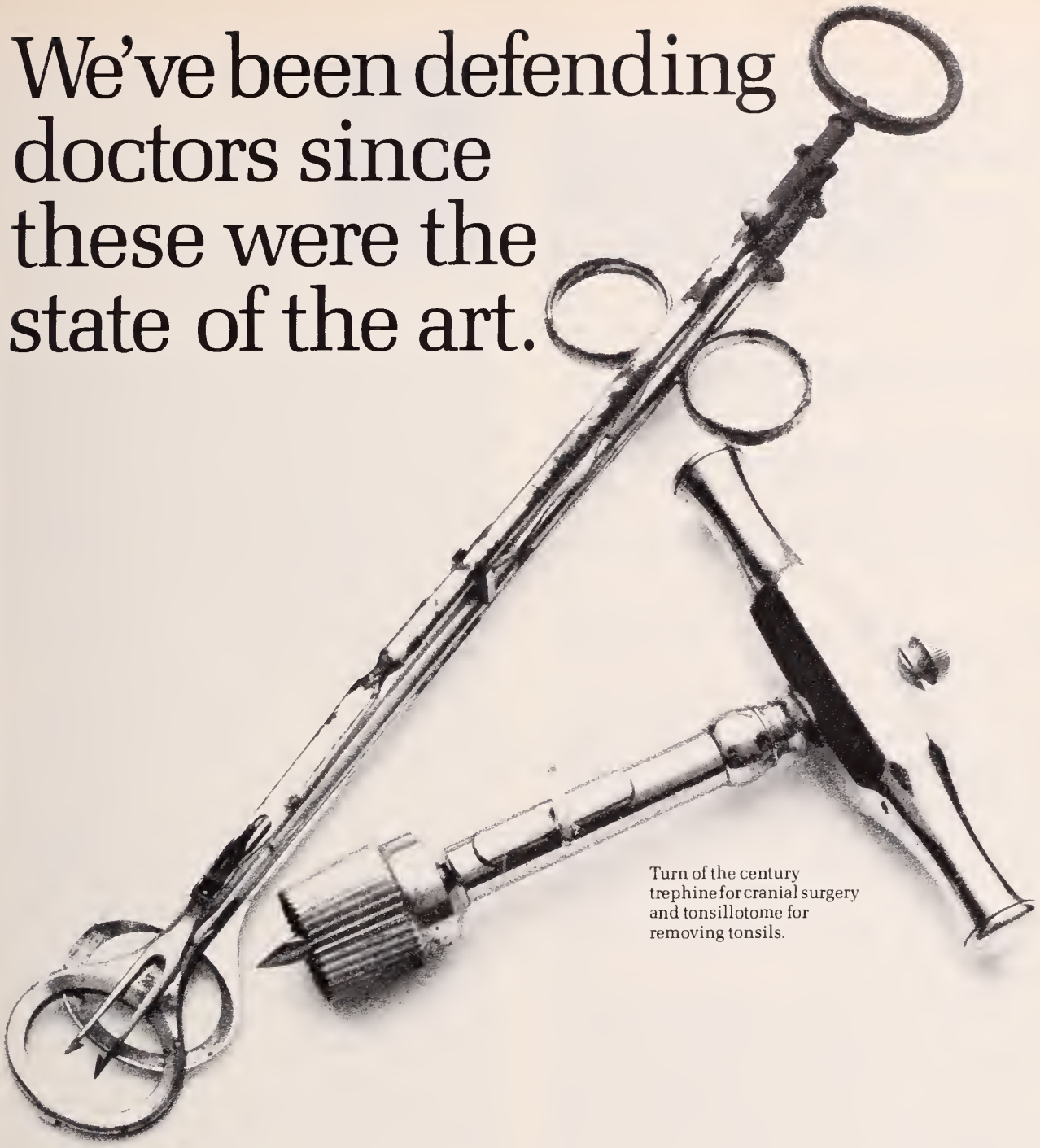
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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



A SPECTACULAR VIEW

The more difficult the climb, the more spectacular the view. — ANONYMOUS

THE VIEW of the Mississippi River from the heights of Effigy Mounds National Monument in northeast Iowa is spectacular. The narrow, winding, steep walkway is a challenge to the older person but well worth the effort. The silence of the woodlands was broken only by the singing of birds and the occasional chatter of a squirrel. These utterances from the wild seemed to say, "Enjoy your visit to our domain, but don't disturb the wonders of nature." The colorful beauty of the wild flowers, the emerging leaves of the trees, and the warm sunshine announced a new season in this beautiful part of Iowa.

The climb to the top was difficult, but the reward was magnificient. Often we take things of beauty for granted, just as we take for granted the efforts of others. I fear many of us do not realize the efforts of the officers, committee members, and delegates of the Iowa Medical Society. These physicians travel many miles to attend meetings in Des Moines; they take time from their practices as well as from their personal and family activities to serve this way. To say the least, some sacrifice valuable time for the good of the membership. Yet, "sacrifice" is not an appropriate term, for they gain much that other Society members do not.

There is a spectacular view of the ramifications of medical practice which can be appreciated only after the difficult climb to the observation point. There are physicians from all parts of the state who serve the IMS and have the unique opportunity to observe the integration of the medical profession into the whole of society. Those physicians from the periphery of the state make a greater contribution, for they give more in travel time and subsequent absence from their patients. This was demonstrated in April at the 1985 Annual Meeting when the IMS officers and delegates gave two or three days of their time for all of us.

It was evident that a high percentage of these hardworking members had come the greater distance to serve. On April 20, 73% of the delegates (or alternates) were present; and on April 21, 76% attended. It was a beautiful weekend, and surely many of those persons would rather have been playing golf or working in their gardens.

IOWA MEDICINE salutes our colleagues who give of their time for the benefit of organized medicine, for they truly gain a perspective not enjoyed by all. — M.E.A.

OUR ADVERTISERS

Many of our readers do not realize to what extent our advertisers support IOWA MEDICINE. Our publication is considered a good medium for advertising. National advertising is provided through the service of the State Medical Journal Advertising Bureau (SMJAB). A sales force, under contract to SMJAB, contacts possible advertisers who buy space in any or all of the journals who support the Bureau. An advertising ethics committee makes judgments on any advertising claims which may be considered questionable.

Another source of advertising comes from local solicitation, as well as businesses who directly contact IOWA MEDICINE. We attempt to keep these advertisements on an ethical level acceptable to members of the Iowa medical profession.

The JOURNAL OF THE IOWA MEDICAL SOCIETY did not carry advertising during its first 2 volumes. The March issue in 1913 carried one page of advertising. Those advertisers were the following: (1) The Standard Chemical Co., Des Moines, which promoted "Sal-Laxthalein," a saline laxative; (2) Star Ranch In-the-Pines Sanatorium, Colorado Springs, Colorado, for the treatment of tuberculosis; (3) Farbwerke-Hoechst Company, New York, with an advertisement about Neosalvarsan, Novocain and Salvarsan; and (4) G. H. Sherman, Detroit, promoting "Sherman's Bacterins," various preparations for vaccine therapy. In a later issue, The Standard Chemical Company purchased a full-page ad for "Gaduotonic," a "reconstructive tonic," which contained "Gaduol" (the active constituent of cod liver oil) as well as creosote, guaiacol and hypophosphites compound in a base of wine and aromatic elixir.

Another 1913 issue of the JOURNAL carried an admonishment from the Society to patronize the advertisers: "If you want a larger and better journal you can have it by writing to our advertisers — I saw your ad in our state journal." The notice suggested the reader "favor those who favor us."

That message is appropriate today. Advertising is big business for IOWA MEDICINE. Of course, the continuing message is to seek more buyers. Advertising pays because, only in that way, do more know about the products being promoted. We have many supporters through the purchase of advertising space in IOWA MEDICINE. They are loyal supporters and in turn merit your support. Seventy some years have not changed that need. — M.E.A.

A TRIVIA GAME

TRIVIA QUESTIONS are all the rage, so try this: What did Tobias Smollett, François Rabelais, Somerset Maugham, A. J. Cronin, Arthur Conan Doyle, and Saint Luke have in common? Right. They were all famous writers. But what else?

Lest you die of suspense, we hasten to reveal that they were all doctors.

From the above, it is fairly clear that the medical profession is well represented in the ranks of distinguished authors, but how does it make out in the roster of doctors portrayed in literature, movies, and TV? Here are a few specific examples from movies and TV, as recalled from memory:

Begin with Dr. Watson, Sherlock Holmes' associate. He comes across as a complete ass. The doctor in *Peyton Place*, played by Lloyd Bridges, is great. He probably is the only stable person in the entire community, and is a true hero. On the other hand, the doctor in *Kings Row*, played by Claude Rains, is just the opposite. He is a sinister and dangerously unstable psychopath in a town full of problems and problem people. To our horror, he even knowingly amputates a normal leg, that of — you guessed it — Ronald Reagan.

On TV, a certain Dr. Kildare was everyone's hero for a time. His most dramatic achievement was doing an emergency splenectomy at the site of a highway accident. A cynic might ridicule such a preposterous scenario unless reminded that a prominent Iowa surgeon crawled into the bottom of a grain elevator pit and, in order to free a man whose leg was caught in a corn auger, amputated the extremity on the spot. Now an amputation is not exactly a splenectomy, but you have to start somewhere. What the "usual and customary" fee was in this case is not known.

Doctor Zhivago: Here the doctor, Omar Sharif, is pretty well kicked around by fate and circumstances. To compound matters, he is emotionally torn between wife and mistress (the mistress won). What with one thing and another, he never seemed to find time to treat many patients. A sensitive man, however.

The doctor in Sinclair Lewis' *Arrowsmith*, a confirmed critic of the medical establishment, violated a fundamental, as well as self-imposed, canon of clinical research during a bubonic plague epidemic and, by so doing, possibly saved thousands of lives. Being a re-

(Continued on page 266)

search zealot, he didn't know whether to be happy or sad about the whole thing. The frequent consumption of considerable liquor helped him through this traumatic period.

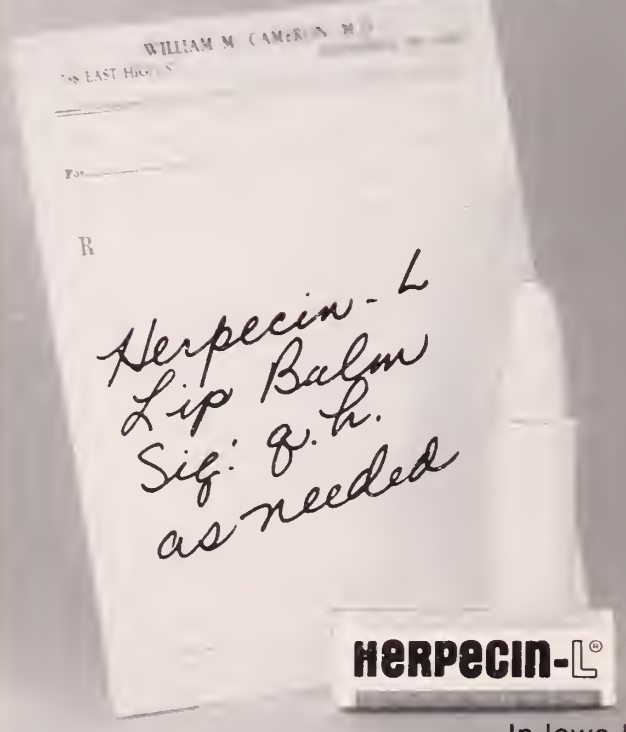
We come now to *Burma Surgeon* by Dr. Gordon Seagrave — a true account of the experiences of the author, a missionary physician in Burma. The movie can be considered Hollywood at its best. It should be everyone's favorite. Dr. Seagrave was of medium height and somewhat chunky in build. Hollywood sellected Gary Cooper to play the part.

The movie reached its climax when Dr. Seagrave's hospital in the jungle of Burma was bombed by Japanese planes in World War II. As the bombs fell, the wooden beams supporting the hospital roof were shattered, and one large splinter, roughly the size of King Arthur's sword, fell and impaled a patient lying in bed. It was a horrible sight. Dr. Seagrave (Gary Cooper) rushed to the bedside, immediately grasped the situation, and called out something to the effect: "Nurse! Quick! A hemostat!" It was inspiring to see the doctor maintain his cool in such a crisis. And if there remained any doubt in the viewer's mind that the situation was under control, it was dispelled by the next order: "Get an emergency white corpuscle count!"

Now back to trivia: Except for the fact that John Keats, Gertrude Stein, and Oliver Goldsmith were famous literary figures, what else did they have in common? Perhaps they were doctors? Wrong. They did, though, have in common the fact that each one had studied medicine but had failed to complete the training.

And for those who like their trivia in detail, we can report that Gertrude Stein knew that a rose was a rose was a rose, but did not know enough medicine to graduate after 4 years at Johns Hopkins. She flunked 4 of 9 final exams. It has been said that William Osler introduced the faculty resolution that denied her a degree. — Daniel F. Crowley, M.D.

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Recent Highlights

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A NEW DIGESTIVE DISEASES CORE CENTER will be established in the College of Medicine with a $1.9 million, 5-year grant from the National Institutes of Health. One of 6 such centers in the country, it will provide opportunity for 18 scientists from Iowa's clinical and basic science departments to coordinate their independent research.

***ROBERT FELDER,** Internal Medicine, has won an American Heart Association (AHA) New Established Investigatorship Award to study central organization of cardiac vagal reflexes. . . . Winning AHA Continuing Established Investigatorship Awards: **Kevin Campbell,** Physiology; **Peter Rubenstein,** Biochemistry; **Douglas Shasby,** Internal Medicine; **John Stokes,** Internal Medicine; **William Talman,** Neurology; **Joseph Walder,** Biochemistry; and **Michael Welsh,** Internal Medicine.*

***AT A GLANCE:** Michael Conn, Physiology, is 1985 recipient of the John Jacob Abel Award of the American Society for Pharmacology and Experimental Therapeutics. Conn was recognized as a young investigator who has "distinguished himself with imaginative contributions to the understanding of the mechanism of action and pharmacological manipulation of gonadotropin releasing hormone." . . . **Bengt Samuelsson,** 1982 winner of the Nobel Prize in Medicine, was at the UI College of Medicine in April to teach and consult as a Charles E. Culpeper Visiting Professor. Samuelsson is best known for his discovery and explanation of the process by which prostaglandins are manufactured and metabolized in living things. . . . The 1985 Family Practice Opportunities Fair will be held Aug. 17 in Des Moines. The annual event is a convenient "first look" opportunity for Iowa communities seeking family physicians, and resident physicians seeking practice sites in the state. Information: (319) 353-6503.*

***MORE THAN A SENTIMENTAL JOURNEY** was involved for **Jeanne** and **Ian Smith,** Internal Medicine, when they traveled to Kingsport, Tennessee to address the 1985 graduates of the Quillen-Dishner College of Medicine at East Tennessee State University. The Smiths were two of the first four faculty members who founded the Appalachian college in 1976. Ian Smith was its first chairman of internal medicine. This year's 60 graduates comprise the third class to complete instruction there.*

***THE BROKEN BRAIN,** a book by **Nancy Andreasen,** psychiatry, has been called the first comprehensive account of psychiatry's biomedical revolution. The highly-readable book takes its title from, and discusses in detail, the abnormalities in brain structure and chemistry often found in people suffering from schizophrenia, severe clinical depression, anxiety disorders and dementia. Technology for studying the living brain is moving ahead at breakneck speed, Dr. Andreasen notes, with improved imaging techniques, and advances in neurochemistry which, in turn, are propelling advances in neuropharmacology. "Psychiatry in the mid-1980s is much like general medicine 40 or 50 years ago — on the brink of discovering its own version of insulin, penicillin, blood transfusion, and cardiac pacemakers," she believes.*

***"CARDIAC IMAGING AND IMAGE PROCESSING,"** the first book on interaction of computers and cardiac imaging techniques, has been written by **David Skorton,** Internal Medicine, and **Steve Collins,** Electrical Engineering. The book, which includes contributions by other scientists, will be published this fall.*

This report has been compiled by the University of Iowa Health News Service.

Historical Vignettes

LOOKING BACK

In commemoration of our 75th anniversary, we salute the past. This is being done in cooperation with and in recognition of the interest of the IMS Historical Committee.

CASES FROM YESTERYEAR*

I WAS CALLED to see the four-year-old son of an engineer who was building a bridge across the Mississippi River in the mid-20's. The child had a temperature of 105 degrees, rigidity and tenderness of the right side of his abdomen, and a white blood cell count of over 30,000. The diagnosis of an acute appendicitis seemed correct. However, when the abdomen was opened a large inflamed gall bladder popped forth. Empyema of the gall bladder was obvious. The gall bladder was removed and the child recovered uneventfully.

When this patient became a man I received letters from insurance companies questioning why a four-year-old child would have his gall bladder removed.

IN 1923, I had another child, a 12-year-old girl with recurring right upper quadrant abdominal pain. She eventually had a cholecystectomy of a gall bladder filled with stones.

IN THE mid-20's, I was called to see a man about 40 years of age with a generalized convulsion. About the time I was to administer sedation two other men inquired about a "man having convulsions." When asked why they should so inquire, they responded, "He is a sand-hog involved in building the Mississippi River bridge and wasn't decompressed." This case of "bends" responded well to proper decompression.

* These patient vignettes have been prepared by Frank R. Richmond, M.D., who is 93 years old and continues to practice in Fort Madison, Iowa.

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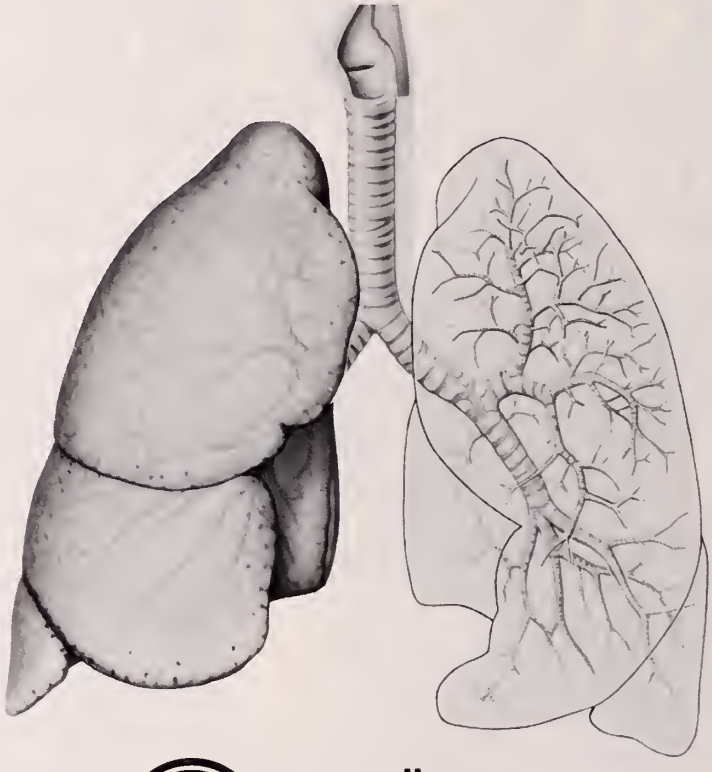
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Brief Summary Consult the package literature for prescribing information

Indications and Usage Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae* and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: *General Precautions* — If an allergic reaction to Ceclor* (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest* tablets but not with Tes-Tape* (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy — Pregnancy Category B — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor* (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGDT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[D61782R]

Note: Ceclor* (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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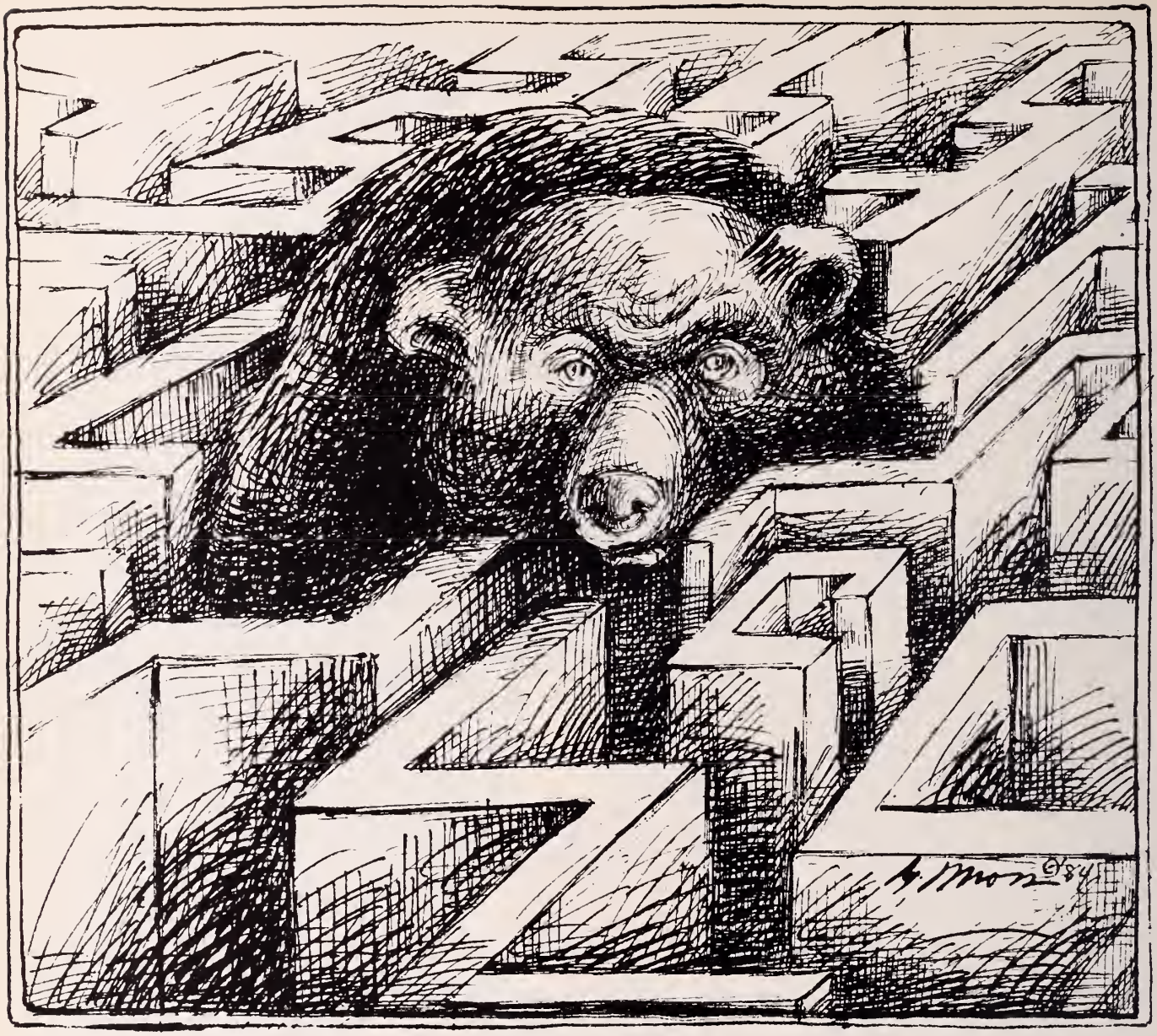
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



FRIENDLY AND COMPETENCE

FRIENDLY was only his name. Indifferent was his manner. Competent was his reputation. Flawless was his performance. Exceedingly sure-footed, he knew exactly what to do, and did it, at all times.

Friendly was the mule that carried me 1600 feet down the steep face of the Molokai cliff to the sea level surface of the Kaluapapa peninsula. I'd never ridden a mule before and had a strong inclination that down a steep cliff at age 55 was not the time to start. Fortunately, as it worked out, I had a stronger urge to give it a try. I really did want to make that trip and my reasons involved, as it is said in educational jargon, both process and content. The process was that mule ride down the cliff. The content involved what I could learn about being on a mule as well as what I would learn below about Father Damien and the famous leprosarium there which he served from his healthy arrival in 1873 until his death of leprosy in 1889.

I mention those jargon words partly because this *is* supposed to be a column about education. I grant that I sometimes abuse my privilege, but for me, in some way or other, almost everything but fulfilling my survival needs seems to connect to teaching or learning, and sometimes even that.

Our societal beliefs about medical behavior often speak of assuring that doctors indeed *know* what they should (knowledge), that they *can* do what they should (competence), and more recently, that they *do* do what they should (performance). Although fairly new, the monitoring of physicians' peformance is happening more vigorously all the time. Cost consciousness impels it, and so does the availability of computers, along with many other variables in an enormously complex equation. The computers are important because they are making it possible for hospital administrators and more remote agencies to report to us about our performance, not only regarding the length of stay of our hospitalized patients but about patient outcomes, our utilization of services for different DRG's, and so on. That will tend, whether for good or ill, to make us very conscious indeed about our medical decisions.

> ***"It is so easy a shibboleth to speak of the patients' best interest when it is litigation or the complaints of a regulatory agency that are the real motivators and monitors."***

We will make choices and recommendations out of concern for costs, for quality, for our own defensiveness (unfortunately), and I hope, especially out of continuing concern for the well being of patients. It is so easy a shibboleth to speak of the patient's best interest when it is litigation or the complaints of a regulatory agency that are the real motivators and monitors. But back to Friendly.

Yes, Friendly proved fully competent and he performed in a totally effective manner, but I must say he certainly seemed bored. Maybe that's how it is with mules, but if I had to rate him for bedside manner, I'd give him an "F." Maybe that's how it is with many human beings as well as with most mules; that is, they rate an "F" in interpersonal relationships. And

(Please turn to page 275)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

TOLERANCE: IMPLICATIONS FOR NITRATE USE IN ANGINA PECTORIS

THE POTENTIAL CLINICAL UTILITY of organic nitrates for the therapy of angina pectoris was first suggested by Sir Lauder Brunton in 1867, who showed that the oral administration of amyl nitrite relieved chest pain in patients with angina.[1] The distinguished English physician William Murrel demonstrated similar effects 12 years later in patients with angina using a 1% solution of nitroglycerin in alcohol given orally.[2] These initial observations led to more widespread use of organic nitrates in angina pectoris. Generally, nitrates have been used both acutely for immediate treatment of an episode of angina and prophylactically for long-term prevention. Other agents, including beta blockers, calcium channel blockers, and even antiplatelet agents have also been used in the prophylactic management of angina. Despite the advent of these newer forms of therapy, organic nitrates are still far and away the most frequently used and widely accepted group of drugs for the therapy of angina pectoris. Many recent and some older studies have suggested that tolerance or tachyphylaxis develops to both the hemodynamic and antianginal effects of organic nitrates after chronic use. Pharmacologically, tolerance is the development of progressive hyporesponsiveness to the effects of a drug following repetitive administration. As a result, increasing doses of the drug are necessary to obtain a given effect. The purpose of this article is to review the available evidence for the development of nitrate tolerance, to assess the utility of nitrates in the therapy of angina pectoris, and to discuss the clinical implications of this information.

Formulations

The available formulations and pharmacokinetic properties of the organic nitrates are shown in Table I. Oral nitroglycerin and pentaerythrytil tetranitrate (PET) are not included since data supporting their clinical efficacy are limited. The buccal (transmucosal) form of nitroglycerin marketed by Merrill-Dow (Susadrin®) and available in the United States since 1982 has not achieved widespread acceptance, probably due to limited advertising.

Clinical Trials and Efficacy

Sublingual nitroglycerin has long been the "gold standard" against which other nitrates are compared. For the treatment of *acute* attacks of angina pectoris, it is the treatment of choice and many clinical studies have documented its efficacy.[3] Sublingual isosorbide dinitrate is also effective for this purpose, but it has a slightly more delayed onset of action and is more expensive than sublingual nitroglycerin.[4] For the long-term prophylactic treatment of stable angina pectoris, oral isosorbide dinitrate and nitroglycerin ointment have been evaluated for clinical efficacy using a rigorous NIH-designed provocative exercise test protocol.[5] In a prospective, double-blind

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

TABLE I
DOSAGE AND PHARMACOKINETICS OF ORGANIC NITRATES*

Medication	Usual Dose (mg)	Onset of Action (minutes)	Peak of Action (minutes)	Duration of Action (minutes)
sublingual nitroglycerin	0.3-0.8	2-5	4-8	10-30
sublingual isosorbide dinitrate	2.5-10	5-20	15-60	45-120
oral isosorbide dinitrate	10-60	15-45	45-120	120-360
buccal nitroglycerin	1-3	2-5	4-10	30-300
nitroglycerin ointment 2%	0.5-2 inches	15-60	30-120	180-480
transdermal nitroglycerin discs	5-20	30-60	60-180	240-480

* Adapted from Abrams, J: Nitroglycerin and long-acting nitrates in clinical practice. *Am J Med* 74 (suppl.):88, 1983.

randomized placebo controlled trial of 13 patients with well-documented chronic stable angina pectoris, Thadani *et al* demonstrated antianginal effects of oral isosorbide dinitrate for only 2 hours after each dose during chronic therapy with the typical 6-hour dosing interval.[6] In a similarly well-designed prospective trial, Reichek *et al* showed that 2% nitroglycerin ointment was effective for up to 3 hours during chronic use, though data were not collected beyond 3 hours.[7] The average dose of nitroglycerin ointment was 5 mg (1/3 inch) every 8 hours. Buccal nitroglycerin has been shown to demonstrate antianginal efficacy for up to 5 hours during acute dosing and has the advantage of rapid onset of activity (2-5 minutes), thus allowing for use in acute attacks of angina.[8] It is currently the only available nitrate which possesses activity for use in both the acute treatment of chest pain due to ischemic heart disease and potentially for prophylactic treatment of chronic stable angina pectoris. However, there is currently no evidence of efficacy during sustained therapy. The popular transdermal nitroglycerin disc delivery systems, initially marketed for their purported 24-hour duration of action, have recently come under increasing scrutiny because of evidence challenging their efficacy. Parker *et al* showed that a standard dose of Nitro-Dur (30 cm^2 patch = 15 mg nitroglycerin) applied as a transdermal patch demonstrated antianginal efficacy for only 4 hours during acute therapy and was no more effective than placebo during chronic use.[9] Similar results have been shown for all 3 brands of transdermal nitroglycerin by other investigators.[10, 11]

Evidence for Tolerance

The problem of tolerance to organic nitrates has been raised since their introduction over 100 years ago. The most impressive evidence and largest collection of case reports comes from the munitions industry where nitrate tolerance and withdrawal have been unequivocally demonstrated in workers who are exposed to high concentrations of nitroglycerin and other organic nitrates used in making explosives.[12] The headaches, flushing, and hypotension which develop after acute exposure to nitrates are reduced in intensity or disappear altogether after several days to weeks on the job. Of greater concern is the occurrence of withdrawal phenomena in some of these individuals, including documented episodes of nonexertional substernal chest pain with ischemic EKG changes, myocardial infarction, and sudden death occurring after several days away from the work place. The mechanism of the withdrawal symptoms is felt most likely to represent myocardial ischemia secondary to coronary vasospasm, and this has been demonstrated by coronary angiography in some patients.[13]

The data with regard to tolerance in patients



with stable angina pectoris who are receiving conventional nitrates are conflicting. In Thadani's study of oral isosorbide dinitrate, antianginal effects lasted for 8 hours during acute dosing but for only 2 hours after chronic therapy for 1 to 6 weeks;[6] furthermore, serum nitroglycerin levels were higher after chronic therapy. These data provide prima facie evidence for the development of tolerance. Similarly, Parker *et al* demonstrated a lack of any significant clinical effects of transdermal nitroglycerin after 2 weeks of therapy compared with placebo, even though a definite response (albeit minimal) was noted during acute dosing at the initiation of the study, again suggesting the development of tolerance.[9] Others have demonstrated tolerance only to the hemodynamic effects of nitrates and not to their antianginal effects.[13] On the other hand, Reichek *et al* found no evidence of tolerance with the chronic use of nitroglycerin ointment, although the dosing interval was 8 hours, a period of time which might have allowed for drug washout and thereby prevented tolerance.[7] There are no reports of the development of significant tolerance to the acute effects of sublingual nitroglycerin, a fact which would support the drug washout concept for avoidance of tolerance since sublingual nitroglycerin is used only on an acute basis. Although the munitions industry experience would suggest that tolerance is more likely to develop after exposure to higher doses of nitrates, this is not clear. In fact, the clinical data suggest that tolerance is related more to sustained blood levels of nitrates than to the absolute amount of drug available.

The mechanism for the development of tolerance is not known. Experiments with animals have excluded increased biotransformation, increased sympathomimetic compensatory activity, and decreased tissue availability of free drug as causes for tolerance.[13] In animals made tolerant to nitroglycerin, vascular reactivity was restored after exposure of isolated vessels to disulfide-reducing agents, suggesting that tolerance might be explained by nitrate-induced oxidation of vascular smooth-muscle sulfhydryl groups at the purported nitrate receptor site.[13] Other studies have shown that local vascular metabolism of nitrates is decreased in the presence of high concentrations of metabolites which accumulate during chronic therapy; accordingly, Fung has proposed that vascular metabolism might be necessary for vasodilation and, therefore, tolerance could be explained on the basis of metabolite inhibition of nitrate binding to receptor sites.[14]

Implications

What are the potential implications of this information for the routine use of nitrates in clinical practice? There is some evidence for efficacy of oral isosorbide dinitrate and 2% nitroglycerin ointment for chronic use in patients with stable angina pectoris, but an equal number of studies have challenged this use by demonstrating the development of tolerance. High doses should be avoided since they may be no more effective than moderate amounts of the drug (e.g., 30 mg every 6 hours of isosorbide dinitrate) and are potentially more prone to induce tolerance. The use of the transdermal nitroglycerin patches in currently marketed doses is equally unsatisfactory since they are apparently no more effective than placebo during chronic therapy and are more expensive than the other available formulations. Howev-

er, data are limited in this regard and further studies are needed.

In summary, lack of clinical response to the various nitrate formulations may be as much due to tolerance as to underlying refractory angina. In view of the fact that tolerance may be related to the maintenance of steady state nitrate blood levels over an extended period of time, efforts to alter the mode of nitrate delivery might be important. Thus, intermittent pulse dosing or appropriately timed drug-free intervals may prove to be effective in avoiding tolerance (perhaps by reactivating receptor sites) and should be considered in the future pharmacokinetic design of transdermal and transmucosal delivery systems. Unfortunately, neither the use of intermittent dosing regimens nor continuous delivery systems seems to provide round-the-clock antianginal efficacy. Therefore, neither can be recommended at this time for the routine treatment of chronic stable angina pectoris if the expectation is that these drugs will provide constant protection.

— CHRISTOPHER KOEPPL, M.D., *Resident in Internal Medicine and* DONALD D. BROWN, M.D., *Associate Professor of Internal Medicine.*

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QUESTIONS AND ANSWERS

(Continued from page 258)

the potential to make a great contribution. It is true health planning for the coming decade. Previous health planning has attempted to find simplistic solutions usually reflecting the bias of the planner and mostly addressing cost control without consideration of the full range of complexities.

Will the ultimate "Health Policy Agenda for the American People" have any relevance for Iowa physicians?

Yes, it is likely to have great relevance. AMA President Boyle spoke about this at the recent IMS Scientific Session. He expressed much optimism over the potential of HPA for Iowa and the country.

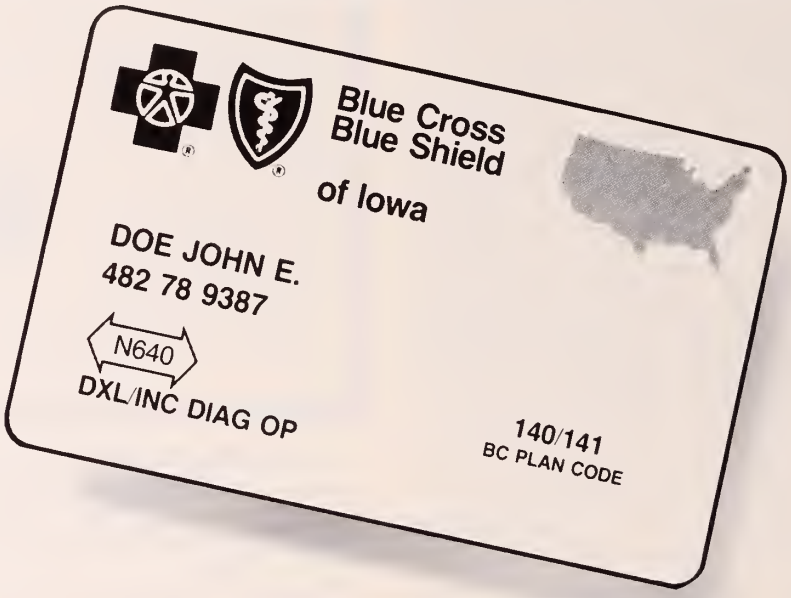
OUR MAN IN EDUCATION

(Continued from page 271)

in its turn, that may arise from the truism observed by Thoreau in his famous statement that "the mass of men lead lives of quiet desperation." Surely the mass of men (and women) lead lives of quiet boredom, if not desperation, even in the face of the titillating or perhaps exhilarating and violent junk presented us through the media.

Even with no CME in his life, Friendly still enjoys among his human companions a high reputation for his daily climb down and up the face of the great cliff. The trail, constructed in 1878, has probably changed very little and likewise his traversing of it. And that's ok for Friendly and what he needs to do, but it won't work for the rest of us who practice medicine and do have CME in our lives. Medicine, it seems to me, offers a way of life and work that permits us wonderfully to avoid boredom and simultaneously allows us the enormous satisfaction of attaining competence and effective performance at least equivalent to Friendly's.

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

PUBLIC HEALTH NURSING SERVICES

CHAPTER 143, CODE OF IOWA, says this about public health nurses: "The authorities employing any public health nurses shall prescribe their duties which in a general way shall be for the promotion and conservation of the public health." This definition enables public health nursing to vary somewhat from county to county based on local needs and local decision making. Prior to 20 years ago, the bulk of Iowa public health nursing time was directed to communicable disease control, teaching families, other health education activities and school health services. A small portion of time was devoted to direct nursing care of acutely and chronically ill persons. In the past 2 decades public health nursing services have expanded primarily in direct nursing care and in the teaching of ill individuals and their families.

The great increase in direct nursing care has been strongly supported by the State Health Department. Iowa physicians have also supported this development as evidenced by the many referrals for care. At the same time there can be a danger of too great an emphasis on home care to the neglect of other components of public health nursing. This is particularly true in these times of extremely tight budgets.

A public health nursing service in Iowa should include the following kinds of activities:

1) *Following up on communicable diseases.* The State Health Department depends on local agencies for this.

2) *Providing community health education programs* through general and special interest groups and through the media.

3) *Doing one-to-one education of persons and families regarding:* care of the new baby; care of a newly diagnosed disease, such as diabetes; or learning how to care for or assist a family member.

4) *Assisting families in protecting the health of their children* in encouraging regular medical care, dental care, immunizations and other essential preventive measures.

5) *Working with schools* in coordination with school nurses or where school nurses are not employed.

6) Providing *clinical services* for immunization or preventive programs, such as hypertension screening and early and periodic child health screening.

7) Participating in *Women, Infants and Children* (WIC) Clinics.

8) *Assisting individuals* of all ages who seem to have "fallen through the cracks" to help them learn about and obtain needed health and related services.

9) Doing nursing *care of the ill at home.*

10) *Providing* other services needed in the county.

Most public health nursing services are provided by county public health nursing agencies under the auspices of county boards of health. Currently 82 of the 99 counties are so organized. In 6 of the 82 counties there is also a visiting nurse association to provide similar service in one or more of the major cities in the county. There are 7 counties in which the entire program is sub-contracted by the board of health to a voluntary nursing agency such as a

(Please turn to page 278)

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

VNA. In the remaining 10 counties, the board of health subcontracts the entire program to a hospital based nursing service. There is one city board of health which operates its own program and one which sub-contracts with a hospital. Together these 106 agencies offer public health nursing services that cover all Iowa citizens. In addition, there are several hospital based and proprietary agencies which offer home nursing services in selected areas.

It is important for local boards of health to insure that vital public health services are continued. The SDH is currently developing standards for state funded public health nursing services to help assure the continuation of these vital services. The Department, local boards, physicians and others have worked together for many years to develop these services within the county public health nursing agencies. It would be a great mistake to neglect the prevention, education, communicable disease control and other broad ranging aspects of public health nursing and let the program concentrate only on home care.

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April 1985 Morbidity Report

Diseose	Apr. 1985 Totol	1985 ta Dote	1984 ta Date	Most Apr. Cases Reported Fram These Counties
Amebiosis	8	18	14	Scattered
Brucellosis	0	0	1	
Chickenpax	1018	4140	4494	Scattered
Compylabocter	12	42	46	Scattered
Cytamegolovirus	1	2	6	Jahnsan
Eotan's Agent infectian	0	6	14	
Encepholitis, viral	1	10	4	Dubuque
Erythema infectiasum	0	0	0	
Gastroenteritis (GIV)	1440	8267	7368	Scattered
Giordiosis	23	91	60	Scattered
Hepatitis, A	3	10	10	Buchanan, Scatt
Hepatitis, B	11	37	38	Scottered
Hepatitis, Non A-B	0	5	9	
Hepatitis type unspecified	0	4	5	
Herpes Simplex	65	311	284	Scottered
Herpes Zaster	0	0	2	
Histoplosmasis	1	3	9	Marian
Infectiaus mononucleosis	28	84	71	Scattered
Influenza, lob canfirmed	10	166	134	Scottered
Influenza-like illness (URI)	3191	21754	27093	Scattered
Legionellasis	0	2	0	
Malorio	1	1	1	Linn
Meningitis				
aseptic	2	11	12	Bentan, Black Hawk
bacteriol	13	49	40	Scottered
meningacaccal	3	7	14	Benton, Hamiltan, Scott
Mumps	2	7	14	Polk, Scatt
Pertussis	2	3	3	Palk, Scatt
Rabies in onimals	14	58	50	Scattered
Reye Syndrome	2	4	4	Dubuque
Rheumatic Fever	0	0	0	
Rubella (German meosles)	0	0	0	
Meosles	0	0	0	
Salmonellosis	14	47	74	Scattered
Shigellasis	1	8	18	Woshingtan
Toxic Shack Syndrame	0	5	9	
Tuberculasis				
tatol ill	7	27	28	Scattered
boct. pas.	7	25	22	Scattered
Typhaid Fever	0	0	0	
Venereol diseoses:				
Ganarrheo	305	1386	1451	Scattered
Syphilis	1	12	10	Palk

Other Non-Reportoble Diseoses: Chlamydia — 1, Jahnson, 1, Polk; Clanarchis — 1, Winneshiek; Ureaplasmo Urealyticum — 1, Linn; Pora Inf. — 1, Polk.

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See following page for brief summary of prescribing information.

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Please consult full prescribing information before use. A summary follows:

INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Peter G. Roode has joined the Bluff Medical Center in Clinton. Dr. Roode received the M.D. degree at Pennsylvania State University; interned and served his surgery residency at Geisinger Medical Center in Danville, Pennsylvania. He is a Fellow of the American College of Surgeons and a member of the Flying Physician's Association. . . . **Dr. Paul W. Wolpert,** Sioux City, has been appointed to represent the Marian Health Center on the Physicians' Advisory Council of the Sisters of Mercy Health Corporation in Farmington Hills, Michigan. . . . **Dr. Xerxes R. Colah** has joined Medical Associates in Clinton. Dr. Colah received the M.D. degree at the University of Bombay in India; interned at the Ohio Valley Medical Center in Wheeling, West Virginia, and served his orthopedic surgery residency at Mt. Sinai Medical Center in Cleveland, Ohio. Prior to locating in Clinton, Dr. Colah practiced orthopedic surgery with Ohio Permanente Medical Group in Cleveland. . . . At the annual meeting of the Boone County Medical Society, **Dr. Louis R. Greco,** Boone, was named president; **Dr. Steven Sundberg,** Boone, vice president and **Dr. James E. Binkard,** Stratford, secretary. . . . The Guthrie County Hospital medical staff has elected **Dr. David R. Ahrens,** Guthrie Center, chief of staff; **Dr. Donald E. Taylor,** Stuart, vice pres-

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ident; and **Dr. Donald W. Todd,** Guthrie Center, secretary.

Dr. Robert Dolan, longtime Decorah physician, has retired. Dr. Dolan received the M.D. degree at St. Louis University School of Medicine and interned at Charity Hospital in New Orleans, Louisiana. Dr. Dolan practiced in Caledonia, Anamosa and Monticello before locating in Decorah in 1962. . . . New medical staff officers at Floyd County Memorial Hospital in Charles City are — **Dr. John R. Ebensberger,** Greene, medical staff chairman; **Dr. James C. Bloom,** Charles City, vice chairman and **Dr. David G. Schweizer,** Charles City, secretary-treasurer. . . . **Dr. Tom D. Throckmorton,** Spencer, recently was named to the city's Municipal Board of Trustees. . . . **Dr. Alan R. Sherburne** is the new president of the Mercy Hospital medical staff in Iowa City. Other officers are **Dr. Thomas R. Nicknish,** president-elect; and **Dr. Stanley A. Hackbarth,** secretary. All are Iowa City physicians.

Dr. Stuart L. Weinstein, professor of orthopaedic surgery at the U. of I. College of Medicine, has been named an American-British-Canadian Exchange Fellow. The exchange program is sponsored by orthopaedic associations in America, Britain and Canada. It selects 4 outstanding U.S. orthopaedic surgeons under age 40 to join 2 such surgeons from Canada for visits to the prime orthopaedic centers in England, Scotland, Australia, New Zealand and possibly South Africa. . . . **Dr. Donovan F. Ward,** Dubuque, is national director of the American Health Care Advisory Association. He is a member of the editorial board for HEALTH*GRAM, the Association's newsletter.

DEATHS

Dr. Louis C. Bennett, 82, formerly of the Macksburg-Zion area, died March 13 at St. Johns Hospital in Santa Monica, California. Dr. Bennett received the M.D. degree at the U. of I. College of Medicine.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Liability Task Force

DILEMMAS PRODUCE reactions. They cover the gamut, e.g., *anxiety, frustration, bewilderment, anger,* etc. The persisting dilemma *(or crisis, if you prefer)* of professional liability and professional liability insurance is a case in point.

Into this turbulent arena this month (June 1985) will march 12 Iowa physicians. These doctors begin an intense evaluation of Iowa liability conditions. An Iowa Medical Society Task Force on Professional Liability was authorized in April by the 1985 House of Delegates; it was appointed in May by the Society's Board of Trustees.

The IMS Task Force on Professional Liability is purposely comprised of physicians from different specialties and places of residence. It will include, for instance, a pathologist from northwest Iowa, an obstetrician/gynecologist from northeast Iowa, an orthopedic surgeon from eastern Iowa, and a neurosurgeon from central Iowa.

The IMS task force will base its work on this resolution approved by the 1985 House:

Resolved, That upon authorizing this task force, the House of Delegates direct it to gather information on the medical liability situation in Iowa and the nation and to recommend specific IMS policies and activities to promote improvement in the situation where appropriate.

This Iowa examination of our professional liability conditions and options will benefit from recent considerations of the subject. One new and meaningful document is entitled *Professional Liability in the 80's.* It has been prepared by the American Medical Association Special Task Force on Professional Liability and Insurance. It contains three reports.

Report One supports statistically our migration from a *crisis of availability* in the mid-70's to a *crisis of affordability* in the mid-80's. Data describing premium and claim escalation are presented. The upward surge in the cost and number of claims is underscored.

Report Two by the AMA Task Force assesses prospects for continued provision of affordable insurance protection. Five insurance spokesmen comment on whether a stable insurance market can be maintained. An analysis is made of the newer state tort reforms and other changes in the court system with an appraisal of what more may be necessary.

The final segment (Report Three) of the AMA task force sets forth recommendations to bring the professional liability problem under control. These recommendations fall into 4 divisions: *education and community action; legislation; state and federal tort reform and judicial reform; defense coordination* and *risk control/quality review.*

As a preface to the recommendations, James H. Sammons, M.D., AMA executive vice president, says in a letter to physicians:

". . . there are steps that every individual physician can take.

"He or she can begin by improving communications with patients and by developing solid physician-patient relationships. It is increasingly apparent that one of our best protections against a professional liability lawsuit is the creation and maintenance of these good relationships.

"These are difficult times for patients, too. There are increasing pressures for everyone to cut costs, and to push patients to assume more responsibility for their own health. Physicians should be the patients' strongest advocate in this effort.

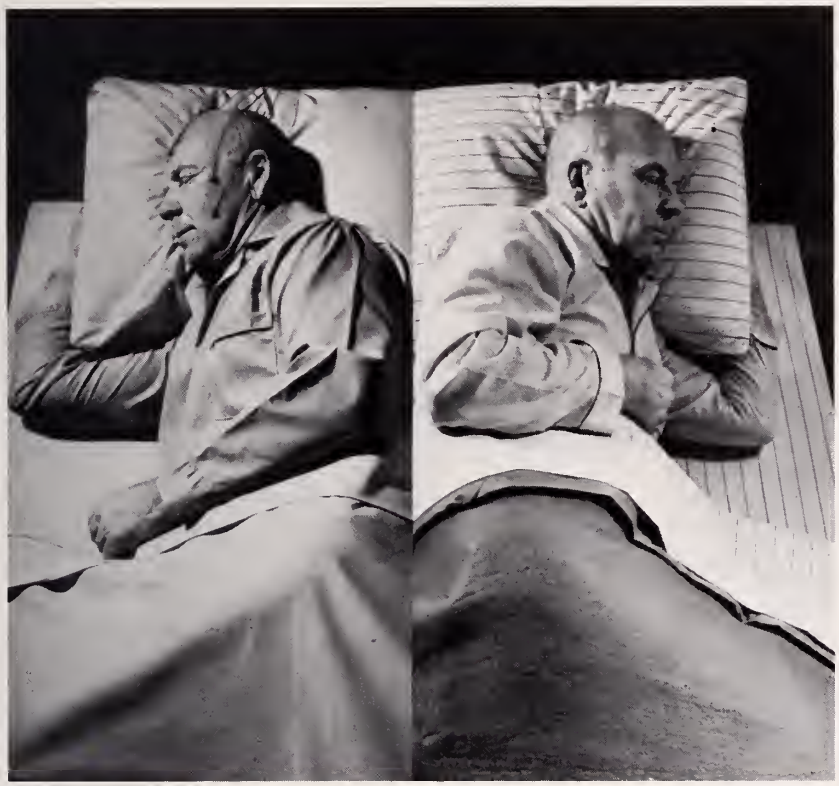
"Finally, all of us must strive for continued scientific excellence, practicing both the art and the science of medicine."

This is a meaningful comment for all Iowa physicians — and may be a suitable backdrop for the new IMS Task Force on Medical Liability.

June 1985

Iowa Medicine

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References: 1. Kales J *et al: Clin Pharmacol Ther 12*:691-697, Jul-Aug 1971. **2.** Kales A *et al: Clin Pharmacol Ther 18*:356-363, Sep 1975. **3.** Kales A *et al: Clin Pharmacol Ther 19*:576-583, May 1976. **4.** Kales A *et al: Clin Pharmacol Ther 32*:781-788, Dec 1982. **5.** Frost JD Jr, DeLucchi MR: *J Am Geriatr Soc 27*:541-546, Dec 1979. **6.** Kales A, Kales JD: *J Clin Pharmacol 3*:140-150, Apr 1983. **7.** Greenblatt DJ, Allen MD, Shader RI: *Clin Pharmacol Ther 21*:355-361, Mar 1977. **8.** Zimmerman AM: *Curr Ther Res 13*:18-22, Jan 1971. **9.** Amrein R *et al: Drugs Exp Clin Res 9*(1):85-99, 1983. **10.** Monti JM: *Methods Find Exp Clin Pharmacol 3*:303-326, May 1981. **11.** Greenblatt DJ *et al: Sleep 5*(Suppl 1):S18-S27, 1982. **12.** Kales A *et al: Pharmacology 26*:121-137, 1983.

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Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. An additive effect may occur if alcohol is consumed the day following use for nighttime sedation. This potential may exist for several days following discontinuation. Caution against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Potential impairment of performance of such activities may occur the day following ingestion. Not recommended for use in persons under 15 years of age. Though physical and psychological dependence have not been reported on recommended doses, abrupt discontinuation should be avoided with gradual tapering of dosage for those patients on medication for a prolonged period of time. Use caution in administering to addiction-prone individuals or those who might increase dosage.

Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase; and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

Dosage: Individualize for maximum beneficial effect. *Adults:* 30 mg usual dosage; 15 mg may suffice in some patients. *Elderly or debilitated patients:* 15 mg recommended initially until response is determined.

Supplied: Capsules containing 15 mg or 30 mg flurazepam HCl.

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IowaMedicine
July 1985
Journal of the Iowa Medical Society

SUMMARY— 1985 IMS HOUSE OF DELEGATES

85





PROFESSIONAL LIABILITY INSURANCE.
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Call or write Mr. Dale Hoing, IMS SERVICES, for complete information. We are located at IMS headquarters, 1001 Grand Avenue, West Des Moines, Iowa 50265 — Telephones: 515/223-1401 or 800/422-3070.

July 1985

IowaMedicine

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ABOUT THE COVER



HOUSE OF DELEGATES — As is the custom for the July issue of IOWA MEDICINE, a summary of the 1985 IMS House of Delegates is provided. The House summary begins on page 294 and includes pictorial highlights as well. The upper cover photo shows Emmett B. Mathiasen, M.D., left, the new IMS president, and John E. Tyrrell, M.D., his predecessor. In the lower photo are William R. Bliss, M.D., left, and Craig D. Ellyson, M.D., winners of the 1985 IMS Merit Award.

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Immanuel Medical Center



Announcing . . .

ONCOLOGY FELLOWSHIP PROGRAM — SEPTEMBER 12-13, 1985

A two-day continuing education program in Oncology for primary care physicians will be held at Holling Education Center, Immanuel Medical Center, September 12-13, 1985. This program is designed to enhance physicians' diagnosis, treatment and follow-up skills in dealing with the most prevalent oncology diagnosis. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of elegant "dining out" together on Thursday, September 12. Participants are housed at the beautiful new Immanuel Plaza Motel on the Medical Center campus.

First Day

Introduction to Cancer
John B. Davis, M.D.
Principles and Treatment of Cancer: Radiation Oncology
Chemotherapy
David J. Harter, M.D.
Herbert A. Hartman, Jr., M.D.
Imaging Modalities
Paul Bender, M.D.*
W. Benton Copple, M.D.*
Primary Oncologic Emergencies
John J. Hoesing, M.D.
Colon Cancer Update
Mark Christensen, M.D.
Tumor Markers
Thomas A. Ruma, M.D.
The Black Spot — Malignant Melanoma
John F. Latenser, M.D.
Lung Cancer Update
Leonard Moss, M.D.
David A. Hughes, M.D.
The Role of the Family Physician in the Treatment of Cancer
Ronald C. Bell, M.D.
Tour of Radiation Oncology

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402) 572-2340.

Second Day

Tumor Conference
John B. Davis, M.D., Moderator
Panel — Medical Staff representing Hematology, Medical Oncology, Pathology, Gynecology, Surgery, Radiology, Urology, General Family Practice, Internal Medicine
Gynecologic Tumor
Leon S. McGoogan, M.D.*
Terrence J. Kolbeck, M.D.*
Chronic Lymphatic Leukemia
John R. Feagler, M.D.*
Joseph D. Verdirame, M.D.*
Multiple Myeloma
John R. Feagler, M.D.*
Joseph D. Verdirame, M.D.*
Control of Pain in the Cancer Patient
David J. Harter, M.D.
Skin Tumor, Diagnosis and Treatment
John F. Latenser, M.D.
Breast Cancer Update
John B. Davis, M.D.
Cancer Screening in the Physician's Office
William A. Shiffermiller, M.D.
Prostatic Carcinoma
Stewart E. Sloan, M.D.*
Gerald C. Felt, M.D.*
Liver Pumps and Hickman Catheters
Thomas Connors, M.D.
Follow-Up of Cancer Patients
John B. Davis, M.D.

* Session presenter rotates for each Fellowship Program.

PRESIDENT'S PRIVILEGE



WHAT DO YOUR PATIENTS THINK?

IN IOWA this month 400 citizens (what's called a randomly-selected scientific sample) are being asked what they think about physicians and the nature of medical care. This American Medical Association public opinion project is being conducted in all states. When they become available in September the Iowa findings will be open to comparison with public thinking nationally.

Moreover, we'll be able to see if there's been any change in Iowa thinking between 1982 and 1985. The IMS co-sponsored a similar Iowa survey three years ago.

Let's hope the new findings are as good (and even better) than 1982. Here are several examples of what Iowans thought then (with the national averages in parentheses):

- 76% *(68%) – Most doctors take a genuine interest in patients.*
- 62% *(55%) – Doctors usually explain things well to patients.*
- 45% *(42%) – Doctors' fees are usually reasonable.*
- 49% *(62%) – People are beginning to lose faith in doctors.*

As physicians our fundamental purpose is to serve competently and compassionately. From a higher source we have been given the intellect needed to become doctors, and we are the beneficiaries of a formal medical education. We must use our skills and capacities responsibly.

Put in even more basic terms, I refer to a comment by Dr. Jim Todd, now AMA senior deputy EVP, about our liability-charged society. He said it this way, "We need to find a way to maintain happy patients in our practice because, put most basically, happy patients don't sue their physicians. And we need to know what makes them happy."

It's a tall order. Our efforts do not always bring happiness. Still, our full commitment should be to patient well-being.

Emmett B. Mathiasen MD

Emmett B. Mathiasen, M.D.
President

Summary — 1985 Actions IMS House Of Delegates

Nearly 200 Iowa physicians represented their county medical societies in April at the Iowa Medical Society House of Delegates. Those policies established by these physician delegates are summarized on the following pages. Topics covered by the 1985 House included professional liability, activity of the Iowa Foundation for Medical Care, the Medicare rural/urban hospital reimbursement differential, cognitive/procedural parity, etc. You are encouraged to read this summary to better understand what issues were addressed by the House of Delegates.

THE 1985 ANNUAL MEETING of the Iowa Medical Society House of Delegates was April 20-21 in Des Moines. Sessions of the House were chaired each day by L. Dean Caraway, M.D., speaker. Open hearings were conducted by 3 reference committees on April 20. The Delegates' banquet occurred April 20 and was chaired by President John E. Tyrrell, M.D.

The 1985 Iowa Medical Society Merit Award recipients were announced as William R. Bliss, M.D., Ames, and Craig D. Ellyson, M.D., Waterloo. Both physicians have provided extensive leadership in Iowa on behalf of medicine. Dr. Bliss was president of the Iowa Medical Society in 1981.

April 20 Session

Registered for the April 20 session of the House were 177 delegates and 1 ex officio member. Minutes of the May 6, 1984 session of the House of Delegates were approved as summarized in the July, 1984, issue of IOWA MEDICINE. Reports contained in the 1985 HANDBOOK FOR THE HOUSE OF DELEGATES were approved as published with the exception of the Emergency Medical Services Committee on page 19 of the HANDBOOK. It was referred to the Reference Committee on Legislation and Miscellaneous Business.

Supplemental Reports

The following reports were made to the 1985 House of Delegates:

Board of Trustees, by Dennis J. Walter, M.D., chairman. As part of this report, an audiovisual program was presented on the new

Iowa Physicians Mutual Insurance Trust/ American Medical Assurance Company (IPMIT/AMACO) professional liability insurance program. This presentation covers most aspects of the new IMS-sponsored IPMIT/ AMACO program. It is intended for use at meetings of Iowa physicians throughout the year.

Board of Trustees Addendum, by John E. Tyrrell, M.D., IMS president. This addendum summarized that consideration which the Iowa Medical Society has given during 1984/85 to pursuing additional legislation pertaining to medical liability. This report recommended creation of a special task force on professional liability.

Necrology, by Donald F. Rodawig, M.D., chairman, Judicial Council.

Nominating Committee, by K. K. Judiesch, M.D., chairman. A resolution contained in the Nominating Committee report asked that incumbent officers eligible for re-election be required to signify their intention by a specific time. This resolution was referred to the Reference Committee on Reports of Officers.

Iowa Medical Foundation, by Dennis J. Walter, M.D., president, Foundation Board of Directors.

Blue Shield, by Clarkson Kelly, Jr., M.D., chairman, Blue Shield Board of Directors.

Iowa Foundation for Medical Care, by Robert L. Mandsager, M.D., IFMC president.

Legislative Committee, by Clarence H. Denser, Jr., M.D., chairman.

(Please turn to page 296)



MERIT AWARD WINNERS — William R. Bliss, M.D., left, Ames and Craig D. Ellyson, M.D., right, Waterlao, shared the 1985 lawa Medical Society Merit Award.



AMA-EDUCATIONAL AND RESEARCH FOUNDATION — Dennis J. Walter, M.D., right, chairman, IMS Baard af Trustees, presents ta Jahn W. Eckstein, M.D., left, dean, U. of I. College af Medicine, checks representing lowa cantributians to AMA-ERF and earmarked far the U. of I.

Iowa Medical Political Action Committee (IMPAC), by Jackson D. VerSteeg, M.D., chairman.

Two checks from the AMA-Educational and Research Foundation were presented by Dennis J. Walter, M.D., chairman, IMS Board of Trustees, to the University of Iowa College of Medicine. One check was for $9,517.62, an unrestricted grant; the other in the amount of $10,300.63 was designated for medical student assistance. John W. Eckstein, M.D., dean, U. of I. College of Medicine, accepted the checks on behalf of the University.

Mrs. Billie Brady, president, AMA Auxiliary, addressed the delegates and commented on various activities and projects of the national auxiliary.

Supplemental reports were noted as being in the delegates' packets from: Ad Hoc Committee on Women Physicians in Organized Medicine; Committee on Medical Service; Iowa Foundation for Medical Care Provider Advisory Committee; Commitee on Alternate Delivery Systems; Committee on Delivery of Health Services, and Committee on Organ Transplantation. They were not read.

In his comments to the House, Dr. Tyrrell cited the challenges confronting the medical profession. He urged physicians to strengthen the doctor-patient relationship and encouraged them to become involved in their communities. Dr. Tyrrell's remarks were published in the June 1985 issue of IOWA MEDICINE.

Twenty resolutions were formally introduced and referred to reference committees. Actions taken on these resolutions are reported subsequently.

Life Members

The following physicians were elected to Life Membership in the Iowa Medical Society:

Boone: John C. Herman, M.D., Boone

Cerro Gordo: Carroll O. Adams, M.D., Mason City and Egmont H. Barg, M.D., Mason City

Dallas-Guthrie: William A. Castles, M.D., Dallas Center

Hardin: Robert J. Johnson, M.D., Iowa Falls

Linn: William G. Kruckenberg, M.D., Phoenix, Arizona; Stanley T. Moen, M.D., Cedar Rapids and Robert M. Wray, M.D., Cedar Rapids

Marshall: Milo E. Jeffries, M.D., Marshalltown

Page: John Martin, M.D., Clarinda

Polk: Ellen Ferengul Anspach, M.D., Mitchellville; Paul T. Cash, M.D., Des Moines and Willard W. Hayne, M.D., Des Moines

Pottawattamie-Mills: George J. Klok, M.D., Council Bluffs

Poweshiek: William I. Evans, M.D., Grinnell

Scott: Lester W. Kimberly, M.D., Venice, Florida and David F. Weaver, M.D., Bettendorf



PRESENTATIONS TO HOUSE — Shawn abave are three Iawa physicians wha made presentatians ta the 1985 IMS House af Delegates. Left is Danald F. Radawig, M.D., Spirit Lake, then chairman, IMS Judicial Cauncil; center, Clarksan L. Kelly, Jr., M.D., Charles City, chairman, Blue Shield Baard af Directars, and Rabert L. Mandsager, M.D., Marshalltawn, president, Iawa Faundatian far Medical Care.



1985/1986 IMS BOARD OF TRUSTEES — The new IMS Board is pictured. Seated are Lynn D. Caraway, M.D., Amana, president-elect; Emmett B. Mathiasen, M.D., Council Bluffs, president, and Dennis J. Walter, M.D., Des Moines, chairman of the board. Standing from left are: John E. Tyrrell, M.D., Manchester, immediate past president; Carol A. Aschenbrener, M.D., Iowa City, vice president; Donald F. Rodawig, M.D., Spirit Lake, trustee, and Daniel M. Youngblade, M.D., Sioux City, trustee/secretary-treasurer.

Woodbury: Worthy C. Boden, M.D., Sioux City and James E. Reeder, Jr., M.D., Sioux City

The following physicians were elected to Associate Membership in the Iowa Medical Society:

Black Hawk: Arthur W. Devine, M.D., Sun City West, Arizona and Oscar K. Lanich, Jr., M.D., Waterloo

Bremer: Vincent Carstensen, M.D., Waverly

Cherokee: Donald C. Koser, M.D., Cherokee

Dallas-Guthrie: Norman L. Krueger, M.D., Casey

Des Moines-Louisa: Robert S. Bell, M.D., Burlington; Harvey B. Eastburn, M.D., Burlington and Wayne R. Lee, M.D., Burlington

Dubuque: Eugene W. Coffman, M.D., Dubuque and Paul J. Laube, M.D., Dubuque

Hardin: Maunis E. Godbey, M.D., Iowa Falls

Jasper: Dorothy C. Forsythe, M.D., Newton

Johnson: David A. Culp, M.D., Belleair Bluffs, Florida; Webster Gelman, M.D., Iowa City and Reuben B. Widmer, M.D., Oakdale

Kossuth: Daniel L. Bray, M.D., Algona

Lee: Patrick J. Cusack, M.D., Sun City West, Arizona

Linn: Alfred Brendel, M.D., Central City and Donald A. McEleney, M.D., Cedar Rapids

Marshall: Harris R. Heise, M.D., Marshalltown; Anthony D. Leschin, M.D., Marshalltown and Otis D. Wolfe, M.D., Marshalltown

Muscatine: John L. Parks, M.D., Muscatine

O'Brien: Andrew D. Smith, M.D., Primghar

Page: Kenneth V. Jensen, M.D., Clarinda

Polk: Jay W. Adams, D.O., Des Moines; Noble W. Irving, M.D., Des Moines; Glen E. Nielsen, M.D., Des Moines; Edward R. Posner, Jr., M.D., Des Moines; Robert J. Reed, M.D., Des Moines; Donald D. Schmitt, M.D., Des Moines; William W. Southwick, M.D., Des Moines and David H. Watkins, M.D., Des Moines

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Poweshiek: John R. Parish, M.D., Sun City, Arizona

Scott: Atlee B. Hendricks, M.D., Bettendorf and Robert A. Towle, M.D., Bettendorf

Shelby: Lawrence V. Larsen, M.D., Harlan and Gerald E. Larson, M.D., Elk Horn

Sioux: Edward M. Eneboe, M.D., Hawarden

Union-Taylor: Harry J. Brom, D.O., Creston and Dallas L. York, M.D., Creston

Van Buren: Kiyoshi Furumoto, M.D., Keosauqua and James T. Worrell, M.D., Keosauqua

Webster: Dean C. Cooper, M.D., Fort Dodge and James G. McCarroll, M.D., Fort Dodge

Woodbury: Cyrus L. Beye, M.D., Sioux City and John A. McFarlane, M.D., Sioux City

The speaker presented information on the reference committee hearings, the balloting procedures and the concluding session of the House.

(Please turn to page 298)

April 21 Session

Registered for the April 21 session of the House were 185 delegates and 2 ex officio members. The minutes of the April 20 session of the House were read and approved.

Mrs. Dallas O. Minchin, immediate past president, Iowa Medical Society Auxiliary, reported on the work of this organization. She indicated the Auxiliary has had an active and productive year.

The following physicians were announced as having been elected or reelected to the positions noted:

President-elect:	**Lynn D. Caraway, M.D., Amana**
Vice President:	**Carol A. Aschenbrener, M.D., Iowa City**
Speaker of the House:	**William C. Rosenfeld, M.D., Mason City**
Vice Speaker:	**Donald L. Kahle, M.D., Dubuque**
Trustee: (3-year term)	**Donald F. Rodawig, M.D., Spirit Lake**
AMA Delegate: (2-year term)	**John R. Anderson, M.D., Boone**
	Robert D. Whinery, M.D., Iowa City
AMA Alternate Delegate: (2-year term)	**Donald C. Young, M.D., Des Moines**
Councilors:	**Harold W. Miller, M.D., Davenport (3)**
	Kent D. Miller, D.O., Waterloo (6)
	James F. Black, M.D., Marshalltown (10)
	Thomas C. Graham, M.D., Iowa Falls (11)
	Max E. Olsen, M.D., Minden (13)
	Donald J. Soll, M.D., Denison (14)
	Robert A. Boldus, M.D., Sioux City (16)

In his remarks to the House, AMA President Joseph F. Boyle, M.D., urged physicians to rededicate themselves to the ethical principle — the patient comes first. Dr. Boyle's remarks were published in the June issue of IOWA MEDICINE.

The speaker complimented the reference committees and asked the delegates to report the highlights of the meeting to their constituent physicians. Following adjournment of the House of Delegates, Dr. Emmett B. Mathiasen, was installed as president of the IMS for the coming year and addressed the House briefly. His inaugural comments were published in the June issue of IOWA MEDICINE. Organizational meetings of the Board of Trustees and the Judicial Council occurred immediately following the installation.



LEGISLATIVE UPDATE — Presenting latest developments in state and national legislation are: Thomas J. Tauke, Dubuque, U.S. House of Representatives, Second District; Jackson D. Ver Steeg, M.D., Des Moines, chairman, Iowa Medical Political Action Committee, and Clarence H. Denser, Jr., M.D., Des Moines, chairman, IMS Committee on Legislation.



NEW LIFE MEMBERS — Of the 19 new IMS Life Members in 1985, six were able to attend the April 20 Delegates Banquet. Standing from left are the six honorees with those spouses attending seated in front: Carroll O. Adams, M.D., Mason City; George J. Klok, M.D., Council Bluffs; Paul T. Cash, M.D., Des Moines; Worthey C. Boden, M.D., Sioux City; William A. Castles, M.D., Dallas Center, and Willard W. Hayne, M.D., Des Moines.

Highlights and actions of the Reference Committee reports are summarized as follows:

Reference Committee on Reports of Officers — Adrian J. Wolbrink, M.D., Harold E. Eklund, M.D., Larry W. Goetz, M.D., Lynn L. Leibel, M.D., and Kim P. Petersen, M.D.

House Action: Commended the Ad Hoc Committee on Women Physicians in Organized Medicine for its effort to increase the active participation by Iowa women physicians in the work of the medical profession.

House Action: Lauded the IMS Board of Trustees for the time and effort it has expended this year in service to the profession and the public.

House Action: Acknowledged the significant efforts by the IMS Board of Trustees in carrying out the mandate of the 1984 House of Delegates to bring into existence the new IPMIT/AMACO Liability Insurance Program, with the attendant major support from the IMS Medico-Legal Committee and the American Medical Assurance Company (AMACO).

House Action: Affirmed the basic goal of the IMS-sponsored IPMIT/AMACO Liability Insurance Program, namely to provide a stable physician-directed liability insurance mechanism for the Iowa medical profession, and by so affirming, the House of Delegates urged full consideration of the IPMIT/AMACO program by all member physicians.

House Action: Accepted the recommendation of the Board of Trustees that the Iowa Medical Society dues for 1986 be retained at the current level of $300.

House Action: Authorized the IMS to establish a task force on medical liability to gather information on the medical liability situation in Iowa and the nation and to recommend specific IMS policies and activities to promote improvement in the situation where appropriate. The task force on medical liability is to draw upon and use existing expertise now available through the Committee on Legislation, the Medico-Legal Committee and officials of the IPMIT/AMACO liability insurance program.

House Action: Referred to the task force on medical liability the following resolutions for review and incorporation into its report as possible:

(1) That the IMS collect the names and addresses of plaintiffs filing lawsuits against Iowa physicians and forward such information to each county medical society at regular inter-

(Please turn to page 300)



AUXILIARY PRESIDENTS ADDRESS THE HOUSE — Pictured above is Mrs. Billie Brady, Greenville, South Carolina, president, AMA Auxiliary. Shown below is Mrs. Patricia Minchin, Council Bluffs, IMS Auxiliary president.



vals so each physician may use this information in any manner which he or she may find individually appropriate.

(2) That the IMS collect the name, firm name and address of plaintiffs' attorneys filing lawsuits against Iowa physicians and forward such information to each county medical society at regular intervals so each physician may use this information in any manner which he or she finds individually appropriate.

(3) That a panel be formed to review any potential claims prior to such claims being filed, and the findings of this panel be admissible in court and that if the claim is filed after the review panel finds no negligence, and the claim is lost in court, the plaintiff is responsible for all court costs and defense costs.

(4) That the IMS exert a strong effort to alleviate the medical malpractice insurance situation through legislation including the following items: (a) strict limitation of two years on the statute of limitations, (b) reasonable cap on awards, similar to the workers' compensation system, and (c) strict cost accounting system to replace the contingency fee system for payment of attorneys' fees in medico-legal cases.

(5) That the IMS immediately organize the physicians of the state into local lobbying groups, that these groups be instructed to alert local business and labor leaders of the malpractice problem and enlist their support for tort reform and that these groups of physicians, business and labor leaders apprise their local legislators of the need for meaningful tort reform.

The sponsors of these resolutions are to be invited and encouraged to meet with the medical liability task force to review their petitions.

House Action: Requested that those incumbent officers eligible for reelection signify their intention to run again by the first meeting of the Executive Council in any given year.

House Action: Directed the Nominating Committee be informed of the interest of the House of Delegates to encourage all interested and well qualified physicians to seek office and be mindful of the need to assess the individual circumstances associated with each particular office to be filled.

House Action: Inform IMS members of the appreciation of the University of Iowa medical students, as expressed to the House of Dele-

gates, for the financial support provided in the form of educational loans.

House Action: Acknowledged the leadership and membership of the Student Medical Society for its increasing interest and participation in the activities of organized medicine.

Reference Committee on Medical Service — William E. Franey, M.D., James E. Eaves, M.D., Paul Ferguson, M.D., L. Z. Furman-Kocimski, M.D., and Kenneth J. Judiesch, M.D.

House Action: Adopted the following AMA policy: "That the IMS support the concept that third party payors should provide more equitable reimbursement for physicians' services which are solely cognitive in comparison with their procedural services, and that the IMS take appropriate action to promote more equitable reimbursement for solely cognitive services with third party payors, business groups and other professional associations."

House Action: Supported equal reimbursement for both rural and urban hospitals with the only exception being the wage index for a specific hospital.

House Action: Directed the IMS to send a letter to each member of the Iowa congressional delegation on the preceding topic incorporating the following: (1) IMS position, (2) the concern of Iowa physicians that this reimbursement system is having a negative impact on the delivery of health care, (3) the need to correct this inequity immediately, and (4) expression of IMS appreciation for their efforts to date in attempting to correct the inequity between rural and urban reimbursement.

House Action: Referred the following resolution, "The IMS is to oppose the concept of corporate ownership of for-profit hospitals and other health delivery facilities," to the Board of Trustees for further study due to the complexities of the issue, the legal ramifications involved and the concern over the issue of access to care.

House Action: Commended the IMS representatives to the Iowa Foundation for Medical Care Provider Advisory Committee for a job well done.

House Action: Directed quality review and peer review in Iowa be done by Iowa physicians regardless of the method of delivery.

House Action: Instructed that review of a physician should be done by a colleague physician in the same specialty whenever possible.

(Please turn to page 302)



REFERENCE COMMITTEE CHAIRMEN — The three physicians above chaired House of Delegates' Reference Committees. Shown from left Peter J. Reiter, M.D., Ottumwa; William Franey, M.D., Cedar Rapids, and Adrian J. Wolbrink, M.D., Mason City.



NEW IMS JUDICIAL COUNCIL OFFICERS — Robert L. Kent, M.D., Burlington, left, and Robert T. Melgaard, M.D., Dubuque, have been chosen chairmon and secretory, respectively, of the IMS Judiciol Council far the 1985/86 year.



CITED FOR SERVICE — Retiring IMS president, John E. Tyrrell, M.D., Manchester, left, presents o recognition plaque ta the immediote past president, Erling Larsan, M.D., Dovenport, in appreciatian of his years of IMS service.

House Action: Affirmed that the IMS should continue its liaison with the Iowa Foundation for Medical Care and requested IMS representatives to the Iowa Foundation for Medical Care Provider Advisory Committee make periodic reports to the IMS Executive Council on this liaison.

House Action: Advised that the Iowa Foundation for Medical Care be strongly encouraged to have all denial forms approved by the Iowa Foundation for Medical Care Provider Advisory Committee before they are sent to physicians.

House Action: Requested the Iowa Foundation for Medical Care be strongly encouraged to develop a method of review which allows and encourages the reviewing physician to communicate directly with the attending physician prior to a denial.

House Action: Encouraged the Iowa Foundation for Medical Care to work more closely with both individual physicians and Iowa specialty societies.

Reference Committee on Legislation and Miscellaneous Business — Peter J. Reiter, M.D., Richard W. Claussen, M.D., Elias C. Jacobo, M.D., John M. O'Shea, M.D., and Stephen D. Richards, D.O.

House Action: Directed the IMS to strongly encourage hospital medical staffs to adopt policies which would assure the attending physician or his/her designated representative to offer the family (next-of-kin) of a brain-dead individual the opportunity to donate all or any part of the deceased's body for the purpose of organ transplantation.

House Action: Referred to the Committee on Safe Transportation the question of whether the IMS should support legislation requiring the installation and use of seat belts in school buses, and asked the Committee to make a recommendation on this topic for consideration by the House of Delegates or Executive Council.

House Action: Supported legislation to raise the minimum age of licensure for moped operators to age 16 with such operators required to pass both a performance and written test.



HIGHEST STUDENT ATTENDANCE — Eight student delegates and seven student alternate delegates, the highest number ever, attended the 1985 IMS House of Delegates. Seated are Jeff Anderson, Joseph Boyle, M.D., AMA president, and IMS Vice President Carol Aschenbrener, M.D. Standing from left Doug Lind, Mike Swanson, Bill Hoover, Devon Goetz, Rod Dynes and Dennis Weaver.

House Action: Encouraged the Iowa Department of Corrections to perform epidemiological studies to determine the public health implications of allowing inmates of correctional institutions to donate blood or blood components prior to the adoption of policies allowing such inmates to do so.

House Action: Agreed to support the position of the American Medical Association with regard to the need for wide availability of immunizations and the pursuit of federal legislation to relieve product liability.

House Action: Rejected a proposal that the IMS evaluate possible changes in Iowa law to protect a physician subject to a complaint by the Board of Medical Examiners from undue publicity while at the same time protecting the public health, and asked the IMS to encourage the Board to establish a procedure to provide for consultation with the hospital medical staff or the county medical society of a physician under investigation prior to the filing of a formal complaint.

House Action: Instructed the IMS to work with existing alcohol and chemical dependency treatment organizations to structure programs which address the problem of trauma resulting from alcohol and chemical misuse.

House Action: Asked the IMS to develop a medical management model for alcohol and chemical misuse trauma evaluation, treatment and referral.

House Action: Requested the IMS develop or have developed an audio-visual educational program designed for Iowa youth, citizens and health care practitioners to explain that trauma related to alcohol and chemical misuse is a major health problem for teenage and young adult age groups.

House Action: Declared its support for and encouraged the maintenance of family health as an essential element of individual health.

House Action: Authorized the IMS to identify and affirm commonalities, basic tenets, and shared beliefs among physicians with regard to patient care and make recommendations on how the IMS might work with specialty societies to assure close liaison and cooperation among all Iowa physicians regardless of specialty.

House Action: Instructed the IMS and the University of Iowa College of Medicine to evaluate Iowa manpower trends critically and urged the College to determine appropriate class size on the basis of population trends and medical need.

Increasing Participation By Medical Students

ROD DYNES
Iowa City, Iowa

Student participation within the ranks of the Iowa Medical Society is gaining momentum. The nature of this stepped up activity is described. Note is made of the record student participation in the 1985 IMS House of Delegates.

The Iowa Medical Society Committee on Student Affairs (CSA) is newly formed to provide liaison between U. of I. medical students and the Iowa Medical Society and/or the American Medical Association. Our chief purpose will be to present our student views, insights, and concerns to the Iowa Medical Society. We also believe it is our duty to represent and promote IMS concerns among medical students. Ideally, we aim to increase student awareness of the numerous important issues facing medicine today. You may be interested to know there are 138 student members of the Iowa Medical Society (as of 5/15/85) compared to 64 in June of 1984.

Mr. Dynes is a junior medical student at the University of Iowa. He is active on the Iowa Medical Society Committee on Student Affairs. He participated in the 1985 IMS House of Delegates.

Background Fundamentals

The Medical Student Section (MSS) of the AMA was founded in 1971 and is the locus for national student activity within the federation. Perhaps more importantly, the MSS is the mechanism to distribute current AMA information to its student members. The CSA serves as the local MSS organization. A majority of CSA activity, however, is generated locally or via impetus from the IMS.

The Committee on Student Affairs serves its student constituency much like the officers of a county medical society serve their colleagues. There are characteristics of our group, however, that make us uniquely different. For one, we have members from almost every county in the state. Also, we are one of the largest component societies with nearly 140 members. Our growth is accelerating and should increase to over 200 by this time next year.

Participation in House of Delegates

Those physicians who attended the IMS House of Delegates in April may have noticed that the University of Iowa had an active student delegation. In the last few years there have been 3 to 5 interested student delegates. In 1985 the largest student group ever was present with the maximum of 16 delegates and alternates. This surge of Iowa student involvement in organized medicine is due in part to CSA activity. It is also due to a general increased political interest which is evident in

the freshman and sophomore medical classes. This expanding medical student interest will benefit organized medicine directly and indirectly.

The Student Medical Society delegation was impressed by the overall organization of the IMS House of Delegates and the quality of its members. The IMS physician delegates were gracious, hospitable and supportive of our presence in the ranks. We welcomed the opportunity to present our resolution to the House acknowledging IMS support of medical students. We had our representatives present at every available activity, and all of us benefitted greatly from the experience.

Our House of Delegates' experience culminated with an informative, thought-provoking session with Joseph Boyle, M.D., president of the AMA. Seven student delegates took advantage of this opportunity, along with our faculty advisor, Carol Aschenbrener, M.D. We are proud to have supported Dr. Aschenbrener as the new IMS vice president. For nearly two hours, we discussed informally the gamut of issues with Dr. Boyle. His insights about the past, present and future of medicine were most interesting. His desire to increase medical student involvement in the AMA is apparent. Dr. Boyle cited the importance of our present level of student participation, as well as our duty to continue an active role in organized medicine.

The Committee on Student Affairs

The CSA is composed of 16 students from all four medical classes. Our current chairman is Doug Lind, a junior from Mason City, Iowa. Doug is a strong advocate of the Iowa Medical Society and the MSS. Doug obtained significant first hand experience in 1984 when he received the initial IMS Medical Student Summer Fellowship. Through his efforts the IMS CSA has become a functioning reality. The enthusiasm and persistence provided by Doug has allowed our group to emerge as a coordinated and functional entity.

Activities This Year

As a result of the successful organizational efforts, other members are becoming active in different areas. For example, Scott Ramsey provided the impetus which brought Norbert W. Budde, Ph.D., director, AMA Division of Survey & Data Resources, to Iowa City last month to present several lectures to physicians, residents and medical students. Another CSA member, Steve Snyder is working to increase medical student awareness of issues before the Iowa General Assembly.

At its May 22 meeting, the Iowa Medical Board of Trustees and the Iowa Medical Foundation Executive Committee approved a 1985-86 grant of $3,000 for combined use by the U. of I. Student Medical Society and the Iowa chapter of the American Medical Student Association.

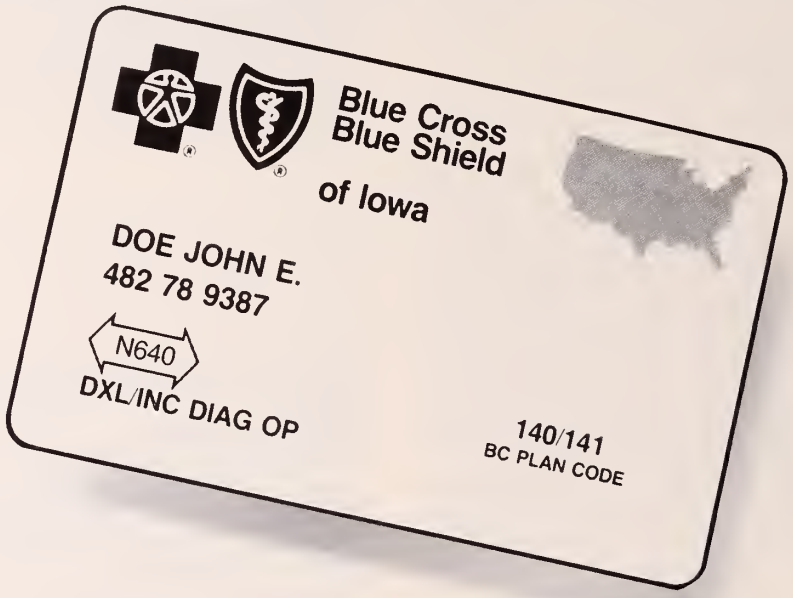
Steve has been working closely with IMS staff to inform student members as to when, and why, and to whom letters should be written concerning vital legislation. Lest the work of others go unsung, allow me to emphasize that several other CSA members are also actively pursuing important activities.

IMS Involvement

We have met as a group 12 times since last August. The first several meetings were organizational and served to establish basic goals. We recognized certain tasks as necessary in our liaison with the IMS. These include (1) bringing IMS activities and concerns to the attention of medical students; (2) developing a Legislative Contact Program, and (3) consolidating medical student concerns for presentation to the IMS. We also quickly realized the great flexibility inherent in our organization to pursue various options and activities. One such option evolved into Dr. Budde's appearance. Others include increasing resident involvement with the CSA, as well as increasing participation on various IMS committees. Future projects and activities are limited only by student interest and their imagination.

Since our inception, IMS members and staff have been encouraging, warmly receptive and enormously helpful. On behalf of all members of the Committee on Student Affairs, I graciously thank the IMS for the assistance and helpful guidance. We sincerely enjoyed the opportunity to meet several of you at the House of Delegates.

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Donald E. Greydanus, M.D.

QUESTIONS AND ANSWERS



ADOLESCENT DEPRESSION AND SUICIDE

Donald E. Greydanus, M.D. is a pediatrician and director of adolescent medicine at Raymond Blank Memorial Hospital for Children in Des Moines. Dr. Greydanus comments here on the mounting concern over adolescent depression and suicide based on his considerable professional experience.

What are the latest statistics on the scope of adolescent depression and suicide in America? How widespread is the problem?

Of the 40 million adolescents in America, over one million attempt suicide each year and approximately 4,000 succeed. The latest statistics indicate that, in the past 15 years, the suicide rate has tripled among the 10-14 age group, quadrupled among the 15-19 age group and tripled among the 20-24 age group. It is unclear what percentage of adolescents suffer from depression, but I believe it is higher than the published 30% adult depression rate.

What are the causes of adolescent depression?

Some adolescents have an inability to cope with the normal problems associated with this difficult period in their lives. For developmental reasons, they lack futuristic thinking. Also, young adults up to age 15 are impulsive and lack judgment. When confronted with a problem, some impulsively grab a gun or take a lot of pills.

However, there are other problems in society which contribute to the increased number of adolescent suicides. In my experience, the majority of kids seen for severe depression are from split homes. The family structure is breaking down; the parent-teenager bond is under attack. We see an incredible number of adolescents who feel worthless and unloved.

What are the physical manifestations of depression in adolescents? What are warning signs which can alert a physician that an adolescent is on the brink of a suicide attempt?

The most important sign is when the parent or another person reports a significant change in the adolescent's ability to adapt to daily living and perform daily tasks. Depression depletes the adolescent's energy. Other signs are a drop in school grades, sleep dysfunction and loss of appetite. Some adolescents will exhibit obvious signs of depression such as poor eye contact and speech; others will not.

Is it true that some adolescents actually have a death wish?

This can be true in cases of schizophrenia or neurochemical and biological depressions that are partially genetic. However, in my experience very few adolescents have a true, persistent and pathological desire to kill themselves. Usually, the suicide gesture is a cry for help from an adolescent who sees no other way out.

What do you recommend as a course of action for physicians who encounter potentially suicidal adolescents?

When an adolescent threatens suicide, he or she has gone beyond normal boundaries and should be taken seriously. A comprehensive evaluation of the individual, the family and other related factors should be done immediately — not next week. This may require a

(Please turn to page 315)

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Neonatal Posterior Fossa Hemorrhage

DOUGLAS E. SMITH, M.D., and
ARNOLD H. MENEZES, M.D., F.A.C.S.
Iowa City, Iowa

Posterior fossa hemorrhage is being reported more frequently with the advent of cranial computerized tomography and real-time ultrasound. The causes are excessive mechanical compression and distortion of the head at birth and dislocation of the squamo-occipital synchrondrosis associated with breech delivery and forceps application. Four new cases are reported to emphasize the need for early recognition and removal.

INTRACRANIAL HEMORRHAGE in the newborn is gaining more attention with the availability of cranial ultrasound and computerized tomography. This is particularly true among high-risk premature infants.[1-3] The notation of birth trauma as the primary etiology is less frequent with improved obstetric care. Discussions now cover hypernatremia, intracranial hypotension, and germinal matrix.[4-11]

Dr. Smith and Dr. Menezes are associated with the Department of Neurological Surgery at the University of Iowa College of Medicine.

Neonatal hemorrhage in the posterior fossa remains a subgroup in which trauma is a prime factor in the full-term infant. So far it has had a morbidity and mortality out of proportion to its incidence.[12, 13] Experiences with neonatal posterior fossa hemorrhage will be described with reference to pathogenesis, diagnosis, prevention and treatment.

Four cases of posterior fossa hemorrhage in the newborn are outlined in Table 1. Included are one premature and three term infants.

PATHOGENESIS

Both premature and full-term infants are at risk for posterior fossa hemorrhage in the neonatal period. However, there are etiological differences. Of 144 autopsies on premature infants, Grunnet and Shields[14] found an incidence of cerebellar hemorrhage in 12 (8%). In this group cerebellar hemorrhage was not seen after 32-weeks gestation, although older infants were observed to have petechiae in the cerebellum. In 8 of the 12 infants hemorrhage was present in the cerebellar germinal plate in the roof of the fourth ventricle. Eleven of the 12 infants had an associated cerebral subependymal germinal matrix hemorrhage. The remaining one was delivered as a double-footling breech with an associated posterior fossa hemorrhage. In this group of 11 premature infants, there was no evidence of mechanical deformation of the occiput or remainder of the cranium.

Takagi,[12, 13] reported 229 premature and

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TABLE 1

CLINICAL SUMMARIES OF FOUR INFANTS WITH POSTERIOR FOSSA HEMORRHAGE

Cases	Obstetric Data	Onset of Symptams	Treatment	Shunt	Surgical Pathalagy	Outcame
1.	Multipara, term, 3800 gm, autlet farceps	Day 1	Subaccipital craniatamy (D12)	Yes	Left cerebellar subdural hematama & laceratian af the cerebellar biventar	Mild mental retardation at 19 years
2.	Primipara, 38 weeks, 3936 gm, C-sectian after 32 haurs labar	8 haurs	Subaccipital craniatamy (D2)	Yes (D6)	Cerebellar subdural hematoma, tarn bridging veins at tentarial incisura, hematama within the vermis	Hypertonicity in arms, mild develapmental delay at 18 manths
3.	Multipara, term, 3450 gm, frank breech, farceps ta the after caming head	Immediate	Subaccipital craniatamy (D2)	Na	Subperiasteal hematama with cantusian af the accipital muscles, subdural hematama, laceratian and cantusion af the right cerebellar hemisphere	Neuralagic exam narmal at 14 manths
4.	Primipara, premature, 31-32 weeks, 1660 gm, vaginal delivery with autlet farceps	Day 1	Subaccipital craniatamy (D13)	Yes (D49)	Left cerebellar canvexity subdural hematama, left superior callicular and intraparenchymal clat	Maderate increased tane all extremities at 9 manths

term infants autopsied at up to 28 days of age following intracranial hemorrhage. Twenty-three of the 229 infants suffered a posterior fossa subdural hematoma; of these, 20 infants were born to primaparous mothers. Friede[15] described "subpial" hemorrhages of the cerebellum in neonates at 28-30 weeks gestational age, all of whom had associated respiratory distress. Scotti, et al,[3] reported cranial computerized tomography scans in 700 neonates between 1976 and 1980. Posterior fossa hemorrhage was observed in 17, including 11 term and 6 premature infants. Hemorrhage was intracerebellar and subdural in 9 term infants and in the vermis in 5 of the 6 premature neonates. Delivery was traumatic in 12 of the 17.

In premature infants without a difficult delivery, the location of posterior fossa hematoma most frequently corresponds to the germinal matrix in the roof of the fourth ventricle. This produces vermis hematoma which may subsequently extrude into an additional site.

Cruveilhier,[16] in *Anatomie Pathologique Du Corps Humain* in 1842, discussed obstetric trauma in association with neonatal mortality. He presented a wood-block print showing hemorrhage in the posterior fossa. A few years later, Virchow[17] discussed intracranial hemorrhage in neonates and described cranial venous sinus disruption and tentorial tearing. Later studies by Holland,[18] and Chase[19] indicated that stresses applied to the falx and tentorium in the molding process may tear these structures. A rent in the tentorium produces blood both in the supratentorial and infratentorial space. Thus tentorial tears or avulsion of bridging veins between the tentorium and the superior aspect of the cerebellum produce subdural venous bleeding into the posterior fossa, as does tearing of the straight and lateral sinuses. However, actual lacerations, contusions or hematomas involving the cerebellum itself are rare under these circumstances. Hence, a second mechanism of hemorrhage in the posterior fossa involving disruption of neural tissue would be invoked.

In 1934, Hemsath[20] reported 32 autopsies supporting displacement and over-riding of the posterior intraoccipital synchrondrosis with delivery as a cause of both supra- and infratentorial hemorrhage, corroborating a theory he quoted from Schroeder's text[21] of 1871, called "occipital osteodiastasis." He demonstrated an over-riding deformity of the skull, wherein the squamous portion of the occipital bone went inwards and upwards into the posterior fossa, while the condylar portion remained fixed. Of the 32 patients, 12 had gross cerebellar trauma and most of the others showed at least a groove across the inferior vermis and lateral cerebellum. In 15 of these cases, the condition resulted from breech deliveries, in which Hemsath believed the essential mechanism was compression of the occiput under the maternal symphysis.

Ravenel[22] reported 2 term infants born by frank breech delivery with forceps. They had a posterior fossa hemorrhage diagnosed by com-

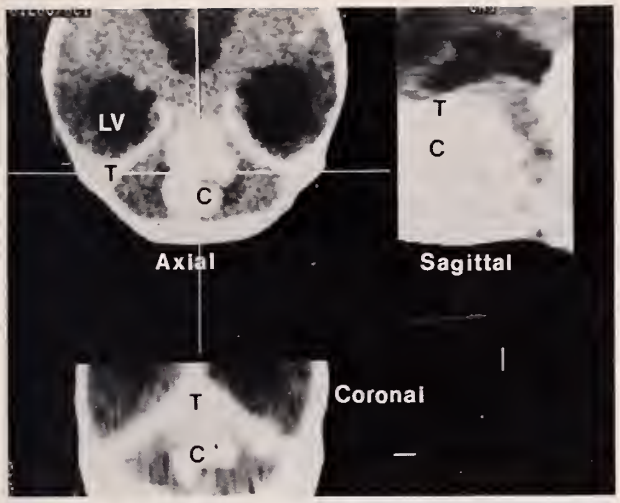


Figure 1. Case 2, computerized tomography through the posterior fossa with sagittal and coronal reconstructions demonstrates the vermis intracerebellar clot (C), the tentorium (T), infratentorial subdural hemorrhage, and the dilated lateral ventricles (LV).

puterized tomography in the first 72 hours of life. In both patients, cerebellar laceration with intracerebellar hematoma was reported. In addition, contusion of muscles was noted during dissection of the squamous occipital bone at the time of posterior fossa craniotomy. This supports the Hemsath theory.

In the premature infant, apart from trauma, cerebellar hemorrhage may be the result of supratentorial germinal matrix hemorrhage.[6] This may disrupt the ependyma and result in extrusion of blood into the third and fourth ventricles with disruption of the cerebellar vermis.[5, 23] In this same light, hypernatremia[8] and intracranial hypotension[4] have been identified more recently as having significant roles.

DIAGNOSIS

The clinical picture of neonates with posterior fossa hemorrhage may be similar to the common convexity subdural hematoma. In most cases subdural taps were unproductive. Infants usually do well for several hours to days before signs of brain stem compression and increase in the intracranial pressure develop. The symptom free period following the trauma of birth probably is the time required for expansion of the hematoma to significant proportions, or the consequences to become manifest. Thus the diagnosis rests upon clinical suspicion in an infant with apneic spells, seizures, falling hematocrit or hydrocephalus.



Figure 2. Case 2, severe vertical cranial molding is seen on this scout lateral skull film.

The spinal fluid is invariably bloody or xanthrochromic and subdural taps produce no fluid. Xanthrochromic CSF is often discovered as an incidential finding during a septic work-up and may be the earliest laboratory confirmation of the diagnosis. In the past, the diagnosis was clinically confirmed with ventriculography of a posterior fossa mass with obstructive hydrocephalus. The real-time cranial ultrasonography has vastly improved our early detection of intracranial hemorrhage.[2, 24] However, the posterior fossa is a relative blind spot for a precise ultrasound diagnosis.[1, 2, 24] Computerized tomography in axial, coronal and sagittal planes allow accurate anatomical localization (Figure 1). Recently, nuclear magnetic resonance imaging has shown maximum clarity of posterior fossa anatomy with the least artifact of any technology to date.[25] However, at the present time computerized tomography remains the standard for diagnosis of these hemorrhages and evaluation of mass effect.

(Please turn to page 312)



Figure 3. Case 4, axial computerized tomography reveals the superior cerebellar convexity subdural clot (C) in relation to the tentorium (T) and the mildly dilated lateral ventricles (LV) and third ventricle (V3).

TREATMENT

The treatment of a suboccipital craniectomy and evacuation of the hematoma will be predicated upon assessment of mass effect and neurological deterioration. The development of hydrocephalus and the need for cerebrospinal fluid shunting will similarly be assessed by the clinical course and ultrasound or computerized tomography evidence of ventricular enlargement.

In the present series, cases 1-3 were term infants with hemorrhages confined to the posterior fossa judged by computerized tomography. Each was thought to have a traumatic delivery. Cases 1 and 3 (Table 1) experienced an early onset of symptoms, and at operation they were found to have subdural hemorrhage together with cerebellar laceration and contusion of the suboccipital musculature with a subperiosteal hematoma (Case 3). These 2 cases illustrate Hemsath's mechanism of "occipital osteodiastasis." In contrast, Case 2 had considerable head molding as documented on the initial computerized tomograms after the mother had been in labor for 32 hours (Figure 2). The operative findings of torn incisural bridging veins and subdural intracerebellar clot exemplified the observations of Virchow[17] and more recent reports.[18, 19]

The fourth case is a premature infant with posterior fossa hemorrhage who had a traumatic delivery. This infant initially had computerized tomogram evidence of blood within the lateral ventricle and in a few hours was shown to have a left cerebellar subdural and hemispheric clot (Figure 3). This illustrates intraventricular hemorrhage associated with prematurity, as well as traumatic posterior fossa hemorrhage presumably resulting from forceps application which produces occipital-squamous separation and cerebellar laceration. The latter findings were demonstrated at the time of operation.

These 4 cases and the reported literature,[12-15, 22, 23, 26-47] establish the most frequent etiology of neonatal posterior fossa hemorrhage as mechanical trauma at birth. [The roles of hypernatremia and intracranial hypotension are believed to be the same as for supratentorial germinal matrix hemorrhage, corresponding with respiratory distress syndrome.] Subpial hemorrhages described by Friede[15] share a pathophysiology with the germinal matrix hemorrhages and their association with hypoxia and respiratory distress syndrome. Other reported etiologies are rare.[31, 48]

OUTCOME

Thirty infants have been previously reported with posterior fossa hemorrhage treated by operation.[12, 13, 22, 27, 28, 30, 35-37, 39-45] Including the present series 88% have survived, with 60% reported normal or satisfactory. Morbidity in the remainder has included mental retardation,[27, 43] abnormalities of tone,[22, 42, 45] and ataxia.[41] From our small series, it is believed that recognition and removal of posterior fossa hematomas early in the course of their evolution may make more normal lives possible for these children.

REFERENCES

The references noted in this paper are available on request either from the authors or the editors of IOWA MEDICINE.

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Liberal Arts and The Preparation for Medicine

RICHARD M. CAPLAN, M.D.
Iowa City, Iowa

The author emphasizes the importance of a liberal arts education for medical students. The physician thus exposed will have a broader perspective of health care.

NO ONE COURSE or sequence of courses can provide an assured avenue to a liberal education. Instead, there are other pathways. *Reading* surely must be at the top of the list. *Discussion, clarification* and *persuasion* are important to develop the facility for critical analysis. And we need opportunities to experience something beyond our world. Courses in languages, literature, anthropology, history and comparative religions all are excellent sources for this opportunity.

There are tools of thinking which one must obtain to have a liberal education: reading, critical analysis, personal expression and skills in logic and analysis. While it isn't necessary to *take a course* in logic as a prerequisite for medicine, or for leading a life, it is crucial that errors in reasoning be recognized and avoided.

Students of a liberal arts education must have a basic acquaintance with the vocabulary and essential facts for a discipline. They also must be able to obtain additional information from experts. These "experts" are sources such as libraries, museums, and in today's world, computers.

One important benefit of a liberal education is in gaining knowledge about humankind. Learning about man involves, in one way or another, every discipline. It was in the ancient mideast, about 1,000 BC, that mankind began to contemplate his own nature and its place in the cosmos.

We call those earliest ruminations philosophy, meaning love of wisdom. As it turns out, philosophy comes close to mathematics, which is eminently related to the knowledge of atomic nuclei. We can go on to perceive a circle of disciplines in which we move from atomic physics to chemistry and on to the total physical living organism, which includes the brain.

That takes us to such considerations as languages, linguistics and cognitive psychology. From them we advance our knowledge of individual persons to collective phenomena, such as social psychology, sociology, anthropology and political science. As we grow more global in our understanding, we call the subject matter ecology, then geophysics. As we expand outward to the universe, we study astronomy. Through astronomy we become increasingly numerical again. We begin to ask questions about cosmogony — how did it all start, what is it all made of and why. This returns us, through theology, back to philosophy once more.

What an enormous challenge it is to learn about the human animal, which can be studied

Excerpts from an address presented by Dr. Caplan, Associate Dean for Continuing Medical Education, at a Cornell College Convocation in Mt. Vernon, Iowa, on Feb. 13, 1985.

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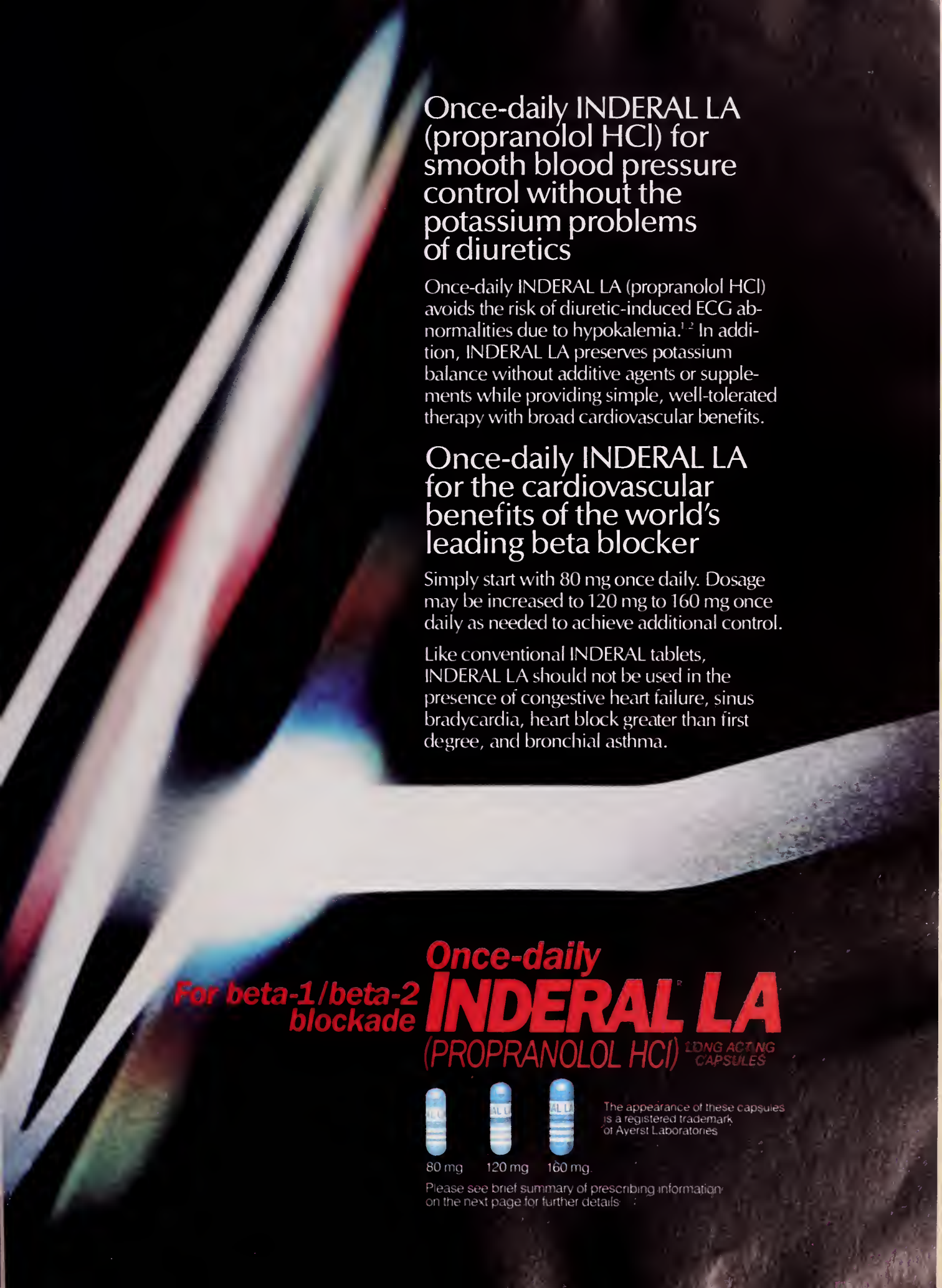
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J-5491-June 1985

Right from the start in hypertension...





Once-daily INDERAL LA (propranolol HCl) for smooth blood pressure control without the potassium problems of diuretics

Once-daily INDERAL LA (propranolol HCl) avoids the risk of diuretic-induced ECG abnormalities due to hypokalemia.[1,2] In addition, INDERAL LA preserves potassium balance without additive agents or supplements while providing simple, well-tolerated therapy with broad cardiovascular benefits.

Once-daily INDERAL LA for the cardiovascular benefits of the world's leading beta blocker

Simply start with 80 mg once daily. Dosage may be increased to 120 mg to 160 mg once daily as needed to achieve additional control.

Like conventional INDERAL tablets, INDERAL LA should not be used in the presence of congestive heart failure, sinus bradycardia, heart block greater than first degree, and bronchial asthma.

For beta-1/beta-2 blockade

Once-daily

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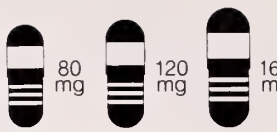
(PROPRANOLOL HCl) LONG ACTING CAPSULES

80 mg 120 mg 160 mg

The appearance of these capsules is a registered trademark of Ayerst Laboratories

Please see brief summary of prescribing information on the next page for further details

Once-daily For beta-1/beta-2 blockade INDERAL® LA (PROPRANOLOL HCl) LONG ACTING CAPSULES



The appearance of these capsules is a registered trademark of Ayerst Laboratories

BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*

INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension; it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE: Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely; or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned, the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY: The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA: Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS: Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests: Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS: Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy: Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose. There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia, congestive heart failure, intensification of AV block, hypotension; paresthesia of hands, thrombocytopenic purpura, arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness, mental depression manifested by insomnia, lassitude, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances, hallucinations, an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slightly clouded sensorium, and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis, erythematous rash, fever combined with aching and sore throat, laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis, nonthrombocytopenic purpura, thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia, LE-like reactions, psoriasiform rashes, dry eyes, male impotence, and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized:* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized:* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized:* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

REFERENCES

1. Holland OB, Nixon JV, Kuhnert L. Diuretic-induced ventricular ectopic activity. *Am J Med* 1981;70:762-768. **2.** Holme I, Helgeland A, Hjermann I, et al. Treatment of mild hypertension with diuretics. The importance of ECG abnormalities in the Oslo study and in MRFIT. *JAMA* 1984;251:1298-1299.

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LIBERAL ARTS AND THE PREPARATION FOR MEDICINE

(Continued from page 314)

from the level of atomic nuclei to political parties. One can have discussions about beauty and morality while discussing atomic physics or political parties.

Medicine in the last few years has been under a great deal of social pressure and received many complaints. These pressures and complaints correspond directly to the technological success of medicine and its ability to solve health problems. Many people feel medicine has become too scientific. But *by virtue of its scientific progress,* medicine has become a discipline that *can really* make a difference by favorably influencing the course of a great many illnesses.

Many patients often want more than just to be cured; they want care, attention, kindness — and even love. They want consideration, information, explanation and a forecast of the future. They want to feel the physical presence of a person they consider knowledgeable and powerful. They want that beneficent force to be present, and perhaps even lay on hands, in the oldest sense of magic or religion — the ancestors of what we call the medical profession.

The dissatisfaction between the medical profession and the public seems to have led the profession and its leaders to try to evaluate why there are problems. A study carried out over the past 3 years by the Association of American Medical Colleges made a number of suggestions for improving the educational process of physicians in the 21st century. The following quotes aptly summarize what the report said about liberal arts education:

"Today's medical students, as well as their future patients, would benefit from reaching into their own souls for those cultured qualities of moral integrity, equanimity, humility and ethical sensitivity — quintessential qualities of all physicians. . . .

"A broad-based liberal education . . . should include poetry to the soul as well as prescriptions for the body. This combination of natural sciences and humanities preparation will create physicians who are skilled technicians, independent thinkers and caring professionals . . . the physician who has been exposed to a generalized education will have a broader perspective from which to view health care, instead of looking at a patient from a strictly biomedical standpoint. Ultimately, he or she will be more aware of the nuances of treating the total individual."

In summary, 2 final quotes are appropriate; both are logical projections of the points made previously. The first of these is Ambrose Bierce's definition of education, which he called, *"that which discloses to the wise and disguises from the foolish their lack of understanding."* And the second is from Allan Gregg, a very distinguished physician who spent much of his life in the administration of philanthropy for the Rockefeller Foundation. In a sense, Dr. Gregg said it all when he observed,

"A good education leaves much to be desired."

QUESTIONS AND ANSWERS

(continued from page 307)

brief hospital stay. Physicians well acquainted with a given situation may be able to develop an outpatient program of individual, family and group therapy without an evaluation. Most kids really don't want to die and will respond if someone attempts to help them find a solution.

You have been quoted as saying adolescent depression and suicide is a "problem we can do something about." Please elaborate on this statement.

Most importantly, anyone who works with adolescents should be alert to the signs of depression they may be giving out. Rarely does a teenager commit suicide without prior warning signs. In addition, all parents need to learn communication and parenting skills. Lots of suicides occur because a child is unable to communicate his or her misery to the parents. Lastly, society needs to take a hard look at itself and the causes of the adolescent suicide phenomenon.

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COMMENTING EDITORIALLY



INITIATIVE

"Advancement is applied initiative. Don't imitate. Initiate." — B. C. Forbes.

The practice of medicine has changed greatly in the past decade. I use the term "practice" in a guarded way because one of the more obvious changes has been in the marketing of medical service.

Several decades ago, the young physician was encouraged to become involved in civic affairs to bring his name to the fore. By working with various civic committees, by giving talks to lay audiences, and by demonstrating a genuine interest in the responsibilities of society, the physician had an opportunity to build his practice. It was considered unethical to advertise in any other way. Even the use of bold face type in a telephone listing was considered out of line.

This has changed. Society has accepted advertising by professionals. Lawyers and physicians now advertise their practices in many ways. Newspaper advertisements are common, as are messages on television and in telephone directory yellow pages. The use of testimonials is considered unethical, but some of the other pronouncements are quite blatant.

Physicians are receiving more and more information about marketing seminars. Many magazines contain articles on ways to promote a practice. We are advised to use advertising and to have various printed materials for dissemination to the public.

All this may be good, for there is no doubt that competition has become an integral part of medicine. Many young physicians have found they must join a group practice or a newer health care delivery mechanism to be successful. The proliferation of HMOs, PPOs and other health care delivery and financing programs has become important to the younger practitioner.

The most valuable asset a physician has is his or her honest desire to serve those who need medical care. Knowledge gained through years of study, combined with a compassionate concern for the patients, needs no advertising; the quality of the medical care will speak for itself.

"Discreet marketing may help in the early days, but as the practice grows the nature of the practitioner will become evident to the people of the community."

A neophyte physician need not imitate to be successful. As in all endeavors, if there is initiative that is sincere and good, success will follow. Discreet marketing may help in the early days, but as the practice grows the nature of the practitioner will become evident to the people of the community. Initiative without ostentation will provide the rewards that any physician desires.

However, that initiative must be tempered with humility, for the person who flaunts his or her position without regard to the feelings of associates will suffer in the ultimate reckoning of worth. Advancement will come with an initiative that unites the practice and the art of medicine with a life of compassion and humility. Monetary rewards will follow. — M.E.A.

Medical Developments

NEWS/PRODUCTS, PROGRAMS, ETC.

ANTIHYPERTENSIVE AGENT — Schering Corporation recently introduced Normodyne® (labetalol HCL), a new antihypertensive agent with the unique blocker/dilator dual mode of action. The vasodilator action lowers blood pressure by reducing vascular resistance, and the beta-blocking action protects the heart against stress and exercise induced increases in blood pressure. It is available in injectable and tablet forms. Safety and effectiveness in children has not been established.

INDOCIN® IN NEW FORM — Indocin® (indomethacin; Merck, Sharpe and Dohme) is now available in suppository form. This nonsteroidal, anti-inflammatory drug for the treatment of certain forms of arthritis has been available in capsule form since 1965. Each suppository contains 50 mg of indomethacin which is readily absorbed in the lower gastrointestinal tract.

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NEW PRODUCT — Lotrisone®, a dual-action antifungal product recently was introduced by Schering Corporation. This new formulation contains the antifungal agent clotrimazole and the corticosteroid betamethasone dipropionate. Lotrisone® is indicated in the treatment of tinea cruris, tinea corporis, or tinea pedis.

FOR ASTHMA PATIENT — The American Lung Association has introduced a new self-help booklet for the asthmatic patient. It explains asthma, its triggers, medicines, etc., and offers information on self-control and breathing techniques.

FDA APPROVED — The Food and Drug Administration has approved a drug that blocks the narcotic "high" of heroin. Trexan® (naltrexone HCl) is available from DuPont Pharmaceuticals. Unlike methadone, Trexan® is nonaddicting. This new drug also enables the addict to receive treatment and counseling while maintaining a more normal life style. Also, it prevents readdiction if impulsive use of narcotics occurs while the patient is maintained on Trexan.®

NEW MEDICATION — Opticrom® 4% ophthalmic solution (cromolyn sodium, USP) is a new prescription in the form of eye-drops, for the treatment of certain allergic ocular disorders. Opticrom® joins Nasalcrom® and Intal® produced and distributed by Fisons Corporation, Bedford, Massachusetts.

FREE COPY — A free copy of "Menus and Recipes to Lower Cancer Risk," is available to consumers from the American Institute for Cancer Research, Department FC, P. O. Box 76216, Washington, D. C. 20013.

EASTER SEAL SOCIETY INFO — The National Easter Seal Society has a number of low-cost or free publications on disabilities and rehabilitation. *Publications for Parents and Families* (A-316) and *Publications for Persons Who Have Disabilities and Their Friends* (A-317) list what is available. Single copies of these catalogs may be requested (accompanied by a self-addressed, stamped, business-size envelope) from the National Easter Seal Society, 2023 W. Ogden Avenue, Chicago, Illinois 60612.

JCAH RECRUITMENT — Interested in a position as a physician surveyor with the Joint Commission on Accreditation of Hospitals (JCAH)? Applicants who successfully complete an initial screening process are invited to JCAH headquarters for a personal interview. For additional information, contact Kristin McRae, Director, Personnel Department, JCAH, 875 N. Michigan Avenue, Chicago, Illinois 60611. 312/642-6061.

RECENT BOOKS

King, Lester S., 1984, *American Medicine Comes of Age*, 1840-1920, American Medical Association, Chicago, Illinois. A reprinting of the series of essays to commemorate the 100th birthday of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. These originally appeared in JAMA from July, 1982, to June, 1984. This series of historical essays is a delightful story of American medicine.

Mangel, Charles and Weisse, Allen, 1984, *Medicine: The State of the Art*, Doubleday and Co., New York, N. Y., $15.95. (Though written for lay persons, this book would be of interest to many physicians primarily as a compilation of many informative facts about many exciting discoveries that have evolved in the world of medicine. The authors have interviewed many experts in their particular fields at medical centers throughout the United States. Broad subject-heads include coronary disease, neonatology, immunology, organ transplantation, artificial body parts, cancer, microsurgery, the gene, and miracles of diagnosis. Various appendices list centers of the various subjects.)

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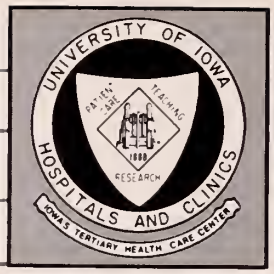
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DRUG THERAPY REVIEW



Reynold Spector, M.D., Editor

THIRD GENERATION CEPHALOSPORINS

IT HAS BEEN MORE THAN 20 YEARS since the first cephalosporin antibiotic cephalothin (Keflin) became available. The cephalosporins have since enjoyed remarkable expansion to a point where their number (over 25) boggles the imagination. Fortunately for the concerned physician faced with the depressing task of keeping up with this ever-expanding array of agents, there is some good news. The differences between any member of a group of cephalosporins (first-, second-, or third-generation) continue to be only minor and of more commercial than medical significance. For example, the new entries into the second-generation cephalosporins differ from preexisting second-generation agents mainly by their pharmacokinetic profile. They all have a longer half-life which may lead to economic savings by allowing longer dosing intervals. The third-generation cephalosporins as a group represent a significant advance in antimicrobial therapy.[1-4] This review will focus on 4 presently available third-generation cephalosporins — cefotaxime, ceftizoxime, cefoperazone, and moxalactam — along with 2 promising new agents that are soon to be available — ceftazidime and ceftriaxone.

Classification

A somewhat arbitrary but useful way to classify cephalosporins is by generations (Table 1). This classification scheme is based primarily on antibacterial spectrum. The first-generation agents have good gram-positive activity and selective gram-negative activity. There are 3 gram-positive organisms which are exceptions to this rule — enterococci, *S. epidermidis*, and methicillin-resistant *S. aureus*. Gram-negative activity is usually limited to most strains of *E. coli*, *Klebsiella pneumoniae*, and *Proteus mirabilis*. The second-generation agents expand coverage primarily to more gram-negative organisms, both aerobic and anaerobic in some cases. Finally, the third-generation cephalosporins have expanded this gram-negative coverage even further. They are more active on a weight basis against the Enterobacteriaceae than any other antibiotic presently on the market. Some of these new third-generation agents are also active against *Pseudomonas aeruginosa*. The price for this superior gram-negative coverage has been a considerable decrease in gram-positive activity.

TABLE 1
THE MAJOR CEPHALOSPORINS AND CEPHAMYCINS

First-Generation	*Second-Generation*	*Third-Generation*
Cefadraxil (Duricef, Ultracef)	Cefaclor (Ceclor)	Cefbuperazone
Cefozolin (Ancef, Kefzol)	Cefomondol (Mandol)	Cefmenoxime (Cefmox)
Cephalexin (Keflex)	Cefmetozole	Cefodizime
Cephaloridine (Loridine)	Cefonicid (Monocid)	Cefoperazone (Cefobid)
Cepholothin (Keflin)	Cefaranide (Precef)	Cefataxime (Cloforan)
Cephopirin (Cefodyl)	Cefotiom	Cefoteton
Cephrodine (Anspor, Velosef)	Cefoxitin (Mefoxin)	Cefpiromide
	Cefuraxime (Zinacef)	Cefsuladin (Cefomonil)
		Ceftozidime (Fortaz)
		Ceftizoxime (Cefizox)
		Ceftrioxone (Racephin)
		Moxoloctam (Moxom)

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

TABLE 2
MICROBIOLOGIC PROFILE

Micraarganisms	*Cefataxime*	*Ceftizaxime*	*Ceftriaxane*	*Maxalactam*	*Cefaperazane*	*Ceftazidime*
Gram-pasitive cacci	Mast Active	Mast Active	Mast Active	Least Active	Intermediate	Intermediate
Enterabacteriaceae	Equivalent	Equivalent	Equivalent	Equivalent	Least Active	Equivalent Activity (braader caverage)
P. aeruginasa	Least Active	Least Active	Least Active	Least Active	Intermediate	Mast Active
Anaerabes	Intermediate	Intermediate	Intermediate	Mast Active	Intermediate	Least Active

Microbiology

None of the new third-generation cephalosporins should be thought of as first-line agents against gram-positive organisms (Table 2). They offer no advantage over penicillin G or ampicillin for most gram-positive infections and in fact are often 10 to 20 times less active. Of these agents cefotaxime, ceftizoxime, and ceftriaxone are the most active. If these agents are being used for other indications, they usually do provide reasonable "coverage" of gram-positive bacteria. This does not apply to *S. aureus, S. epidermidis,* or the enterococci.

As previously stated, these agents provide superior coverage against gram-negative bacilli, including many multiresistant organisms often involved in hospital-acquired infections. They owe this activity to their excellent beta-lactamase stability and their high affinities for penicillin-binding proteins. Their minimum inhibitory concentrations (MICs) are all usually less than 0.5 μg/ml for most of the Enterobacteriaceae and any small differences in these values is of doubtful clinical significance. Of these agents, cefoperazone is slightly less active because of a relative instability to gram-negative beta-lactamases. Ceftazidime, on the other hand, is slightly more active against *Serratia marcescens* and *Acinetobacter* species.

The antipseudomonal activity of the third generation cephalosporins is extremely variable. Ceftazidime is by far the most active agent in this class. Cefoperazone is also a useful agent but less so than ceftazidime. With the exception of these 2 antibiotics, all the other third-generation cephalosporins are inferior to the antipseudomonal penicillins for the therapy of serious pseudomonal infections.

None of these agents should be considered first-line drugs in the treatment of anaerobic infections. They are all clearly inferior to clindamycin and metronidazole. Cefoxitin remains the most active cephalosporin against *Bacteroides fragilis* and other *Bacteroides* species. Moxalactam's activity approaches that of cefoxitin against anaerobic organisms. Ceftazidime is the least active of these agents against anaerobes.

Pharmacokinetics

This review will highlight only some of the pharmacokinetic differences of these agents that relate directly to dosing or toxicity considerations (Table 3). All of these compounds possess a longer elimination half-life than the older cephalosporins. Cefotaxime has the shortest half-life (1 hour) due to the fact that it is rapidly metabolized in the liver to a desacetyl derivative. This derivative is only one-tenth as active but appears to act synergistically with the parent compound and has a half-life of 1.6 hours. Due to its short half-life, a 4- to 6-hour dosing interval is necessary for patients with serious infections. Ceftizoxime, moxalactam, cefoperazone, and ceftazidime are intermediate with respect to their elimination half-lives. Serious infections warrant an every 6- to 8-hour dosing interval with these agents. Finally, ceftriaxone has the longest elimination half-life (8 hours) of any third-generation cephalosporin. Serum levels after a 2-gram IV dose are approximately 15 μg/ml at 24 hours, a level well in excess of the MIC of many susceptible pathogens. This is the first of the third-generation cephalosporins that can be administered effectively in a once-daily dosing schedule. In this era of cost containment, the future of antibiotics with such favorable pharmacokinetic profiles appears promising. With usual intravenous doses (1-2 grams), all of these agents achieve peak serum concentrations be-

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TABLE 3
PHARMACOKINETIC PROFILE

	Cefotaxime	Ceftizaxime	Ceftriaxane	Maxalactam	Cefaperazane	Ceftazidime
Serum Half-life (haurs)	1	1.7	8	2	2	2
Dasing Interval (haurs)	4-6	6-8	12-24	6-8	6-8	6-8
Peak Serum Cancentratian (2-gm IV dase)	100	100	250	150-200	250	150-200
Metabalism	Yes	No	Na	Na	No	No
Majar Raute af Elimination	Renal	Renal	Renal Hepatic	Renal	Hepatic Renal	Renal
Dasage Madificatian in Renal Failure	Only for Creatinine <10ml/min	Yes	Na*	Yes	Only with Cancamitant Liver Disease	Yes

* With severe hepatic disease in an anephric patient, dasage modificatian may be necessary.

tween 100 and 200 μg/ml, a concentration which is usually 100 times the MIC of susceptible pathogens. Ceftizoxime, ceftazidime, and moxalactam are excreted entirely in the urine. Dosage modifications of these agents are necessary with renal insufficiency. Due to cefotaxime's partial metabolic degradation, dosage modification is necessary only with severe renal failure. Cefoperazone and ceftriaxone have important nonrenal routes of excretion and they accumulate far less in patients with renal insufficiency. Seventy percent of cefoperazone is excreted in the bile. Dosage modification is necessary only when there is concomitant hepatic and renal impairment. Approximately 40% of ceftriaxone is eliminated in the bile. Since the drug is given every 12 to 24 hours, dose adjustments are necessary only in anephric patients with severe hepatic disease.

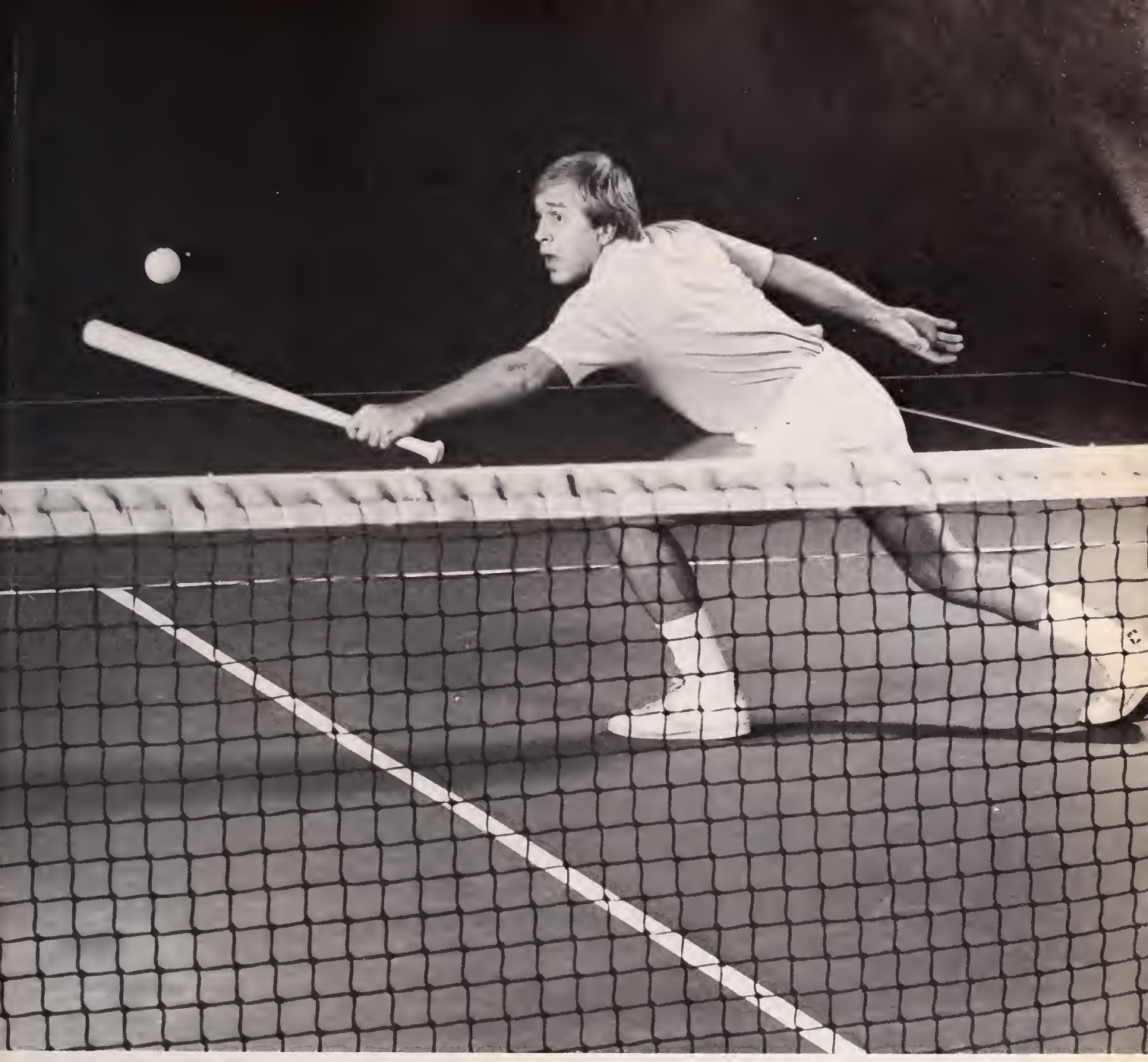
All of the third-generation cephalosporins have excellent tissue penetration. One of their most useful characteristics is their ability to penetrate inflamed meninges. Results from numerous studies indicate that cefotaxime and moxalactam reliably penetrate inflamed meninges at concentrations adequate for most cases of gram-negative meningitis. Cefoperazone appears to penetrate less reliably and its ultimate role in the therapy of gram-negative meningitis is less well-defined. There is less clinical experience with ceftizoxime, ceftriaxone, and ceftazidime, but evidence to date indicates reliable penetration into the CSF in the presence of inflamed meninges.

Toxicity

Third-generation cephalosporins owe part of their success to their relative safety and lack of serious toxicity. Adverse reactions do occur and are in large part similar to reactions with the older cephalosporins — local pain and erythema, transient liver enzyme abnormalities, gastrointestinal disturbances, leukopenia, thrombocytopenia, and a positive Coomb's reaction. There are several notable exceptions, however. Moxalactam and cefoperazone have been associated with serious bleeding episodes. The incidence of hypoprothrombinemia (up to 45% with moxalactam) is significantly higher than actual bleeding episodes (<5%), and both of these appear to be even less common with cefoperazone. Bleeding episodes occur predominantly in patients with renal failure, hepatic dysfunction, or preexisting coagulopathy. The hypoprothrombinemia is reversible with small doses of vitamin K, and routine prophylactic administration of this agent (10 mg per week) is recommended for all patients at risk.

A disulfiram-like reaction can also occur with these 2 agents due to inhibition of acetaldehyde dehydrogenase. This can occur up to 72 hours after receiving the last dose of these antibiotics, so patients should be cautioned to avoid alcohol consumption for several days after treatment is stopped. Cefoperazone also appears to cause more diarrhea than other

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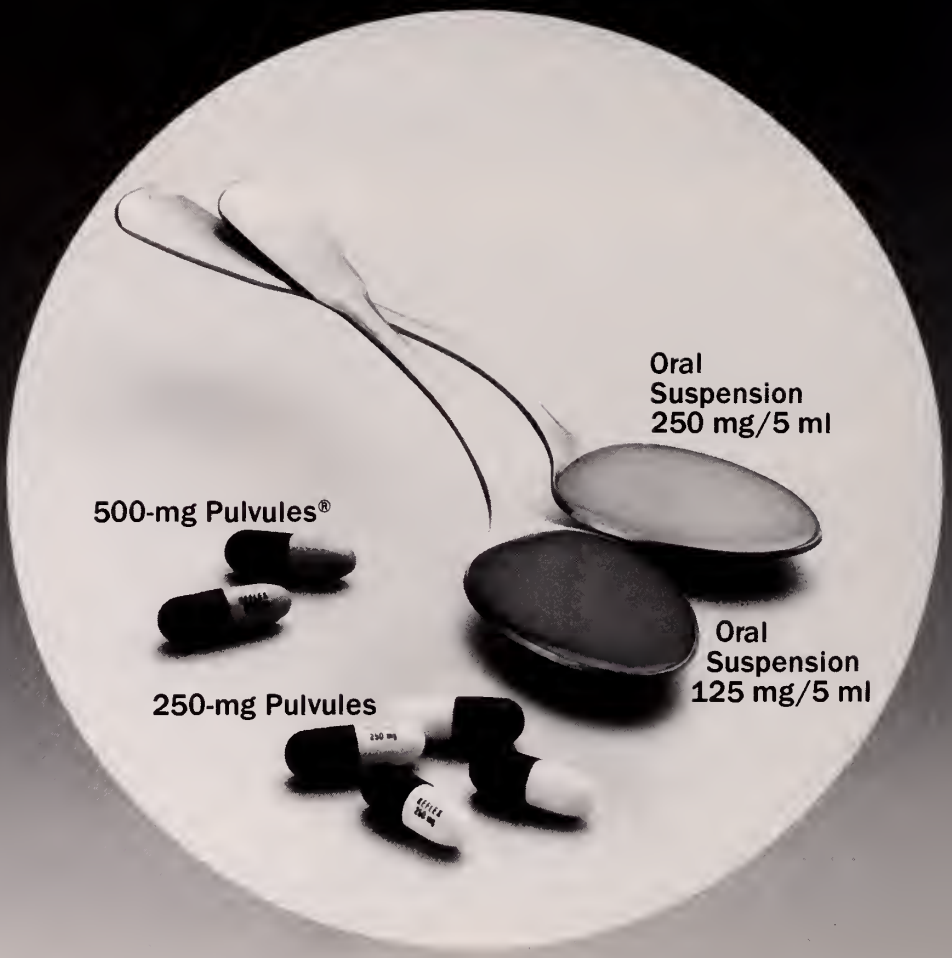
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third-generation agents. Recent studies cite an incidence up to 37% and a severity requiring discontinuation of the drug.[5]

Finally, superinfection and the development of resistance during therapy has been observed in 6 to 12% of patients. Enterococcal superinfection has been described with most of these agents including occasional cases of endocarditis. *Candida* superinfection may also occur with these agents as with any other broad spectrum antibiotic. Development of resistance during therapy has occurred with certain *Pseudomonas, Serratia,* and *Enterobacter* isolates. Whether this will prove to be a special problem with these new agents awaits further experience.

TABLE 4
INDICATIONS FOR THIRD-GENERATION CEPHALOSPORINS

Definite
1. Grom-negotive meningitis
2. Infections due to oerobic grom-negotive enteric bocilli resistont to other ontibiotics
3. Febrile neutropenic potient ollergic to penicillin

Possible
1. Pneumococcol or meningococcol meningitis in o penicillin-ollergic potient
2. Penicillinose-producing *H. influenzoe* meningitis
3. Grom-negotive pneumonio
4. Any grom-negotive theropy in which the potentiol for ominoglycoside nephrotoxicity is high

Clinical Uses

Specific recommendations for the use of these new agents are difficult to delineate. For all potential indications, with the exception of gram-negative meningitis, excellent alternative regimens are already available. There have been few clinical trials comparing the efficacy of the new third-generation cephalosporins with older, more established regimens. Also the relative efficacy of one new agent versus another has not been definitively established. Uses for these agents may be classified into definite and possible indications (Table 4).

These agents are an undisputed major therapeutic advance in treatment of gram-negative meningitis. They are clearly superior to chloramphenicol with a reported 90% cure rate with cefotaxime or moxalactam for meningitis caused by *E. coli* and *Enterobacter, Klebsiella,* and *Serratia* species. Ceftizoxime, ceftazidime, and ceftriaxone may also prove to be highly effective, but clinical data on these agents are

TABLE 5
1985 COSTS TO PHARMACIST OF CEPHALOSPORINS

	Cost per Grom	Cost Per Doy	Cost 10 Doys of Theropy
Ceftizoxime 2 gm Q8°	7.97	47.82	478.20
Cefotoxime 2 gm Q6°	8.50	68.00	680.00
Cefoperozone 2 gm Q8°	9.50	57.00	570.00
Moxoloctom 2 gm Q8°	12.20	73.20	732.00
Cephopirin 2 gm Q6°	1.95	15.60	156.00
Cefozolin 2 gm Q8°	2.76	16.56	165.60
Cefoxitin 2 gm Q6°	6.82	54.56	545.60
Ceftrioxone 2 gm Q24°	23.55	47.10	471.00

limited at the present time. Cefoperazone should probably be avoided as its penetration into cerebrospinal fluid is unpredictable. None of these new agents alone provides adequate therapy for pseudomonal meningitis. Intrathecal or intraventricular aminoglycosides must be added to the regimen. Ceftazidime may ultimately replace this mode of therapy, but insufficient clinical data are available at the present time to make firm recommendations. Cefotaxime also has excellent cure rates for pneumococcal and meningococcal meningitis and should be considered as an alternative to chloramphenicol in the penicillin-allergic patient. The third-generation cephalosporins are also very active against *Haemophilus influenzae,* including penicillinase-producing strains, and may prove to be superior to chloramphenicol for ampicillin-resistant strains.

The second area where the third-generation cephalosporins have made an important contribution is in the treatment of infections caused by gram-negative bacilli resistant to multiple antibiotics. These organisms are almost exclusively nosocomial pathogens seen in areas of high antibiotic use in large urban or university hospitals. It is only in the setting of an infection *documented* to be caused by an organism resistant to more traditional therapeutic agents that a third-generation cephalosporin should be a consideration. Empiric therapy should only be considered in the setting of a well-defined ongoing problem with resistant gram-negative rods on a particular floor or unit (e.g., burn unit) of a hospital. It should be emphasized that there is presently little evidence that the third-generation cephalosporins are more efficacious than other older

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antimicrobials in the treatment of infections caused by antibiotic-susceptible gram-negative bacilli. In a recent prospective, randomized, double-blind study, cefotaxime was reported to be superior to nafcillin plus tobramycin in a group of patients with serious bacterial infections in a variety of sites.[6] Other prospective controlled clinical trials to answer this question are sorely needed.

The febrile neutropenic patient with a definite allergy to penicillin is another example of the utility of third-generation cephalosporins, in particular cefoperazone. In this setting, it is well established that *Pseudomonas aeruginosa* is a major consideration and that synergistic combination therapy is necessary. Use of cefoperazone and an aminoglycoside, while probably inferior to an antipseudomonal penicillin and an aminoglycoside, is a reasonable alternative in the penicillin-allergic patient. None of these agents should be used alone in this setting. Recent evidence suggests that ceftazidime may, in selected instances, be used successfully as a single agent in the febrile neutropenic patient, and ongoing clinical trials may soon answer this question.

Gram-negative pneumonia is a possible indication for a third-generation cephalosporin. All of these agents have had excellent results as monotherapy for hospital-acquired gram-negative pneumonia or *Klebsiella* pneumonia developing in the community. It is not possible to say, however, that they are superior to older regimens such as a first-generation cephalosporin and an aminoglycoside.

Finally, a third-generation cephalosporin should be considered for any gram-negative infection where the potential for aminoglylcoside nephrotoxicity is high. This would include extended therapy such as that necessary for gram-negative osteomyelitis (4-6 weeks). Another possible setting is in the complicated postoperative surgical patient where the risk of aminoglycoside nephrotoxicity may be considerable. For intraabdominal infections, it appears that all of these agents with the exception of cefoperazone are comparable in efficacy to the combination of an aminoglycoside plus clindamycin. Cefoxitin has also been shown to be comparable to this combination, and whether the third-generation agents offer any advantage over it has yet to be determined.

Cost-Benefit Considerations

All of the third-generation cephalosporins are expensive agents with average pharmacy acquisition costs of $8 to $10 per gram (Table 5). The cost of a drug is of minor importance if it yields a superior result against a serious disease. The superior results obtained with these agents for the therapy of gram-negative meningitis far outweigh any cost considerations. Cost should be of paramount importance when 2 therapies have similar outcomes and toxicities. Evidence to date indicates that for many indications these agents are considerably more expensive than alternative regimens of equal efficacy. This is especially true when one considers that for most serious gram-negative infections these agents must be combined with an aminoglycoside which adds on the cost of monitoring serum aminoglycoside and creatinine levels. Where these agents have the most potential for being cost-effective is in situations where they can be used as single agents or can be given on a once-a-day or twice daily basis. Ceftazidime is the only antibiotic of this class that shows promise for having a major indication for monotherapy. Its ultimate cost-effectiveness will depend on its price once it is released. Ceftriaxone, with the possibility of a single daily dose, is also promising. If its price is not exorbitant when it is released, it may become the preferred agent of the third-generation cephalosporins.

Conclusions

The third-generation cephalosporins are the most active antibiotics currently available against the Enterobacteriaceae. They represent a major advance in the therapy of gram-negative meningitis and the therapy of infections caused by Enterobacteriaceae resistant to older beta-lactam compounds or aminoglycosides. They are also reasonable therapeutic alternatives for other forms of meningitis (pneumococcal, meningococcal, *Haemophilus influenzae*) and for therapy of any gram-negative infection in which the risk for aminoglycoside nephrotoxicity is high. There is little evidence that these agents are superior in the therapy of infections caused by gram-negative organisms that are sensitive to older beta-lactam compounds or aminoglycosides. While ceftazidime holds promise for mono-

therapy of serious gram-negative infections, especially in neutropenic patients, none of the agents can be recommended as single agents for any serious gram-negative infection at the present time. Also, none of these agents is superior in treatment of pseudomonal infections to an antipseudomonal penicillin and an aminoglycoside. However, in a penicillin-allergic patient, cefoperazone combined with an aminoglycoside is a reasonable alternative. The third-generation cephalosporins have no place in the therapy of documented gram-positive or anaerobic infections, most community-acquired infections, or surgical prophylaxis. Based on their toxicities, moxalactam should be avoided and cefoperazone used with caution. The third-generation cephalosporins are not cost-effective in most situations. Their economies in dosage due to their long half-lives are offset by their high cost per gram and the frequent necessity of combining them with an aminoglycoside. Ceftriaxone may ultimately become the most cost-effective third-generation cephalosporin. — DAVID S. DAVENPORT, M.D., *Fellow Associate* and ROBERT A. CLARK, M.D., *Professor, Division of Infectious Diseases, Department of Internal Medicine.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

MATERNAL SERUM ALPHA-FETOPROTEIN SCREENING PROGRAM

On September 1, 1984 the Central Screening Laboratory designated by the Birth Defects Institute (BDI) began accepting specimens for the Pilot Maternal Serum Alpha-Fetoprotein Screening Program. This program has been developed with input from the Iowa Medical Society, local physicians and the BDI screening subcommittee.

The Maternal Serum Alpha-Fetoprotein Screening Program is designed to detect neural tube defects. Approximately 6,000 infants with NTD's are born annually in the United States. The prevalence of NTD's varies nationwide. In Iowa it is approximately 1 per 1,000 births. Anencephaly is a lethal malformation that accounts for about one-half of the cases. The remainder are open or closed spinal lesions. The incidence of open spina bifida in Iowa is approximately 0.4 per 1,000. Most surviving cases of open spina bifida are associated with long-term disability including lower limb paralysis, sensory loss, chronic bladder or bowel problems, meningitis, hydrocephalus and mental retardation. It is possible to detect approximately 85% of all neural tube defects; about 15% go undetected.

Anterior abdominal defects are also associated with elevated levels of MS-AFP and therefore are detectable. Both an omphalocele (1 in 6,000 live births) and gastrochisis (1 in 20,000 live births) can be detected.

In the past many reported conditions have been associated with elevated MS-AFP. Some are chromosomal in origin such as Turner Syndrome. Upper gastrointestinal obstructions may be associated with an elevation and one rare group of autosomal recessive conditions, congenital nephroses, often show elevated values.

Other high-risk pregnancies will be identified in the program. The majority of twin gestation can be detected via an elevation in MS-AFP. Early detection of a twin pregnancy should result in better obstetric care and better neonatal outcomes. There is also a group of pregnancies associated with non-anomalous infants in which maternal serum AFP is elevated, but the amniotic fluid AFP is normal. These pregnancies have a higher chance for complications in the form of stillbirths, premature labor and neonatal deaths. Further research may lead to improved prenatal care in these high-risk pregnancies.

Early Prenatal Detection

The objective of the screening program is to allow couples the option of early prenatal detection of neural tube defects and other disorders associated with an elevated MS-AFP. If a neural tube defect is found, termination of the pregnancy is but one option. Conversely, many couples will wish to know this fact, but may choose to continue the pregnancy. Under these circumstances, preparations can be made for an optimal delivery and postnatal management. Other identified complications offer the possibility of improved prenatal care.

Physicians should inform their patients of the availability of AFP testing so the patient can participate in the screening program. Par-

(Please turn to page 330)

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg, for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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ticipation by the patient in the program is voluntary. The MS-AFP screening program will be administered much like the present newborn screening program, which has been extremely effective. Therefore, a comprehensive approach consisting of screening, diagnosis, treatment, management and appropriate genetic counseling is assured.

Physicians are urged to be aware of couples who are at an increased risk to have a child with a birth defect and provide information accordingly.

For women who have had a child with a NTD, women who have a NTD, or whose reproductive partner has a NTD, the risk is sufficiently high to warrant aminocentesis as the initial management procedure.

Consultation Is Advised

If a couple knows of the increased risk and the advisability of aminocentesis as a primary procedure, the attending physician is urged to seek consultation. The question of whether spina bifida occulta in either parent leads to an increased risk for a child with a NTD is not fully resolved. Other possible risk factors may include a history of insulin dependent maternal diabetes, maternal valproic acid therapy, a previous child with isolated hydrocephalus, and a family history of a NTD in second or third degree relatives of the fetus (highest if a maternal aunt has had a child with a NTD).

The BDI has literature available for physicians and their patients. An informational pamphlet contains a brief description of the nature of the disorders being screened, their genetic implications, and the method of collection of the screening specimen.

A consulting physician will be available. These physicians are on call and will immediately respond to any questions in the testing procedure. The consulting physician will provide the attending physician recommendations regarding the specimens, referral, treatment, needs for further testing, or any additional information.

It is anticipated the program will begin in late summer or early fall. Further information will be available as the program is developed. Should additional information be desired contact the Birth Defects Institute of the Iowa State Department of Health. Phone: 515/281-6646.

May 1985 Morbidity Report

Disease	May 1985 Total	1985 to Date	1984 to Date	Mast May Cases Reparted Fram These Caunties
Amebiasis	8	26	26	Scattered
Brucellasis	0	0	1	
Chickenpax	1534	5144	5928	Scattered
Campylabacter	28	70	59	Scattered
Cytamegalavirus	1	3	6	Palk
Eatan's Agent infectian	0	6	16	
Encephalitis, viral	0	10	4	
Erythema infectiasum	0	0	36	
Gastraenteritis (GIV)	1534	9801	8400	Scattered
Giardiasis	37	128	71	Scattered
Hepatitis, A	10	20	14	Scattered
Hepatitis, B	3	40	42	Lauisa, Scatt
Hepatitis, Nan A-B	3	8	10	Black Hawk, Scatt
Hepatitis type unspecified	0	4	6	
Herpes Simplex	137	448	351	Scattered
Herpes Zaster	0	0	2	
Histaplasmosis	3	6	12	Palk, Paweshiek
Infectiaus mananucleasis	12	96	93	Scattered
Influenzo, lab canfirmed	3	169	146	Baane, Cloytan, Palk
Influenza-like illness (URI)	2851	24605	30191	Scattered
Legianellosis	1	3	0	Jahnsan
Malaria	0	1	1	
Meningitis aseptic	0	11	12	
bacterial	12	61	45	Scattered
meningacaccal	0	7	16	
Mumps	0	7	16	
Pertussis	0	3	3	
Robies in animols	23	81	64	Scattered
Reye Syndrame	0	4	1	
Rheumatic Fever	0	0	0	
Rubella (German measles)	0	0	0	
Measles	0	0	0	
Salmanellosis	36	83	88	Scattered
Shigellasis	0	8	19	
Taxic Shack Syndrame	0	5	9	
Tuberculasis				
totol ill	7	34	30	Scattered
bact. pas.	7	32	24	Scattered
Typhoid Fever	0	0	0	
Venereal diseases:				
Gonorrhea	369	1755	1772	Scattered
Syphilis	2	14	10	Shelby, Waadbury

Other Nan-Repartable Diseases: Chlamydia — 3, Jahnsan; Roto Virus — 1, Corrall; 1, Cerra Gardo; 1, Polk; Trichamanos — 1, Cerra Gordo; Ureoplasmo Urealyticum — 1, Dubuque; 4, Jahnsan; 1, Kassuth; 1, Muscatine; 2, Scatt.

Historical Vignettes

LOOKING BACK

In commemoration of our 75th anniversary, we salute the past. This is being done in cooperation with and in recognition of the interest of the IMS Historical Committee.

CASES FROM YESTERYEAR*

In the mid-20's I was called to the headquarters of a company building the Mississippi River bridge. A man was lying on the ground, blood oozing from his lifeless left chest. The foreman said two workers who lived together in a box car became embroiled in a drunken argument about cheating. One shot his friend in the chest. The injured man ran outside and inquired of the foreman, "Boss, what side is your heart on?" The foreman replied, "The left side." The injured man said, "That's where I was shot," and dropped dead. The other man hopped a fast freight train going west and was never found.

In 1930 I saw a boy about 12-years-old who scrapped his forehead on some bushes while coasting down a country hill. Malignant pustules formed; a smear of the secretions yielded anthrax bacilli. He recovered.

When the shell plant first started west of Burlington, I had a male patient, age 55, with high blood pressure. I checked him about once a month. He was hired with the understanding that he must get his blood pressure down. After working about a week, he came to the office and his blood pressure was 140/70. After several weeks without medication, I ask him what he did at the plant, "I work with chemicals," he replied. "What kind of chemicals," I asked. His answer was nitrates. As long as he worked there (several years), he took no medication.

* These patient vignettes have been prepared by Frank R. Richmond, M.D., who is 93 years old and continues to practice in Fort Madison, Iowa.

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Charles E. Driscoll, associate professor, Department of Family Practice, U. of I. College of Medicine, has been appointed to the Committee on Research of the American Academy of Family Physicians. . . . **Dr. William R. Wanner,** Sioux City, was named a fellow of the American College of Physicians at the College's annual scientific meeting. . . . **Dr. Robert M. Kretzschmar,** Iowa City, has been elected to the executive committee of the Iowa Division of the American Cancer Society. Dr. Kretzschmar is a past president and member of the national board of directors. A former faculty member in the U. of I. Department of Obstetrics and Gynecology, Dr. Kretzschmar now holds a clinical professorship at the U. of I.

Dr. Jay Ginther, Clinton, has been elected to the International Arthroscopy Association. The 700-member association is comprised of surgeons with special interest and expertise in arthroscopic surgery. Dr. Ginther is one of 5 Iowa surgeons to be so recognized. . . . **Dr. Donald D. Heistad,** professor of internal medicine, U.of I. College of Medicine, has received a medical investigator award from the Veterans Administration Central Office in Washing-

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ton, D. C. The award is given to VA doctors who are recognized nationally for their achievements in biomedical research and have been leaders in the training of new investigators. . . . **Dr. Ronald A. Vidal,** Clinton, has been certified by the American Board of Otolaryngology. Dr. Vidal earned his M.D. degree at New York State University in Buffalo, New York, where he also completed a two-year surgery residency and his otolaryngology residency. . . . **Dr. Thomas J. Pauly,** Cedar Rapids, was elected president of the Iowa Society of Plastic and Reconstructive Surgeons at its annual meeting in Des Moines.

Dr. Duane D. Jasper plans to join Medical Associates in Independence this summer. Dr. Jasper received the M.D. degree at the U. of I. College of Medicine and served his family practice residency at St. Joseph Mercy Hospital in Mason City.

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A Monthly Commentary

IN THE PUBLIC INTEREST

The Challenges Persist Says AMA Report

THERE ARE today an unprecedented number of groups casting an analytical gaze toward the delivery of medical care. We have an environment that is experiencing rapid and perhaps even radical change. Obviously, it will require forward-thinking physicians in Iowa and across the nation to shape what further changes may be on the health care horizon.

This statement, or perhaps more accurately this challenge, is the pervading theme and principal impetus for a newly-published 117-page report from the AMA Council on Long Range Planning and Development. The 1985 version of "The Environment of Medicine" is an update of a 1981 study done by the AMA Council. It does not presume to make cast-in-concrete predictions. However, this AMA report meticulously examines the myriad of factors likely to affect the future of health care and is a foresightful attempt to grasp their implications for physicians.

After tracking physician and public attitudes for over a decade, the AMA Council concludes that *cost* is the primary issue facing health care today. Consequently, it receives much attention in the report, as demonstrated by this statement:

"Financial pressures, as well as media attention to the medical care sector, have created an impetus for change in the environment. A general sense is emerging that 'The health care system must be changed quickly.'"

The report stresses the changing health care roles being accepted by government, business, organized labor, third parties, hospitals and patients because of their increasing concern over costs:

"The major participants have become more active in attempting to modify, to some degree, the health care system in order to restrain costs. This change in roles has probably increased the potential for structural change of the health care system. Further, the focus on reducing health care costs may create pressures that will threaten the quality of care. Physicians and organized medicine will have to continue to stress the importance of maintaining quality."

Based upon careful analysis of the latest data available, the AMA report cites these additional trends significant for physicians:

- **A slow growth in demand for medical resources implies an increasingly competitive environment for physicians.**
- **The supply of active physicians will continue to increase faster than the population.**
- **A growing number of physicians will practice in a group setting and provide services in alternative delivery systems such as HMOs and free-standing clinics.**
- **The future will bring an increased number of entrepreneurial opportunities for physicians.**
- **Despite the recovering economy, high interest rates will continue to be a problem for young physicians establishing private practices.**

Putting aside the specifics of the AMA study, perhaps the most salient point is made in the foreword by Charles F. O'Donnell, M.D., chairman of the Council on Long Range Planning and Development:

"Success in responding to the environment within which the profession must provide its services may be as important to health in America as any challenge we, as a profession, have ever faced."

July 1985

Iowa Medicine

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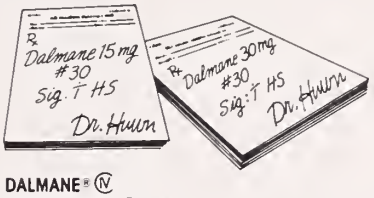
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IowaMedicine

August 1985

Journal of the Iowa Medical Society



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August 1985

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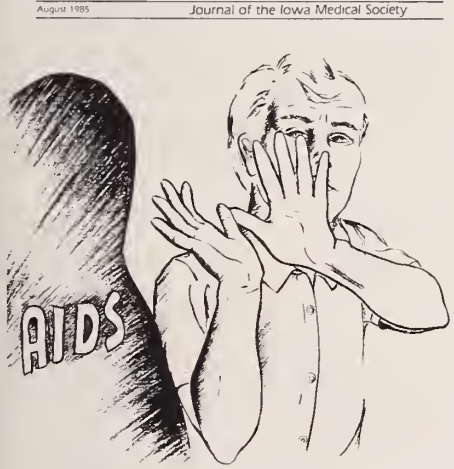
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ABOUT THE COVER



IN A SMALLER IOWA CITY

ABOUT THE COVER — Acquired Immunodeficiency Syndrome (AIDS) is a nationwide concern which has not escaped Iowa. Several papers in the August issue address the topic. Of particular interest is the question-and-answer discussion with Laverne Wintermeyer, M.D., of the State Department of Health, on AIDS matters in Iowa. Also reported is a case of AIDS detected in Mason City. And, finally, there is a paper commenting on similarities found in AIDS and Hodgkin's Disease. COVER DESIGN: Neva Fowler

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PRESIDENT'S PRIVILEGE



HOW MANY ARE NEEDED!

THE MATTER of physician supply and distribution is one in which most of us have a keen and personal interest. The subject is addressed continually, just recently by the policy-making Houses of Delegates of the Iowa Medical Society and the American Medical Association.

This April the 1985 IMS House approved this statement:

Resolved, That the Iowa Medical Society and the University of Iowa College of Medicine continue to critically evaluate manpower trends in Iowa and that the College be urged to determine appropriate class size on the basis of population trends and medical need.

Then, in June, the AMA House authorized a task force to evaluate the effects of physician supply and distribution on the quality and costs of medical care.

The IMS Committee on Delivery of Health Services has monitored Iowa manpower developments for several years with good input from the U. of I. College of Medicine. The Committee's 6-page report to the 1985 IMS House of Delegates has relevant statistical data. It says, for instance, we had a net gain of 71 active physicians in Iowa in 1983; 243 doctors entered Iowa medical practice, and 172 left. From 1977 to 1983 there was a net gain of 550 physicians (both MDs and DOs of all specialties).

Various factors need to be in our minds as we evaluate our medical manpower circumstances. These include our declining population, particularly in rural Iowa; a low doctor/patient ratio (1/840) by comparison; a high percent (also by comparison) of post-65 aged citizens; diminishing third-party revenue (particularly government) to cover health care services; the increased use of ancillary and supportive personnel, etc.

In recent years physician policymakers have said let the marketplace determine how many physicians are produced and where they locate. This idea has carried the thought that healthy competition is positive.

This basic posture does not mean we should forget the demographic influences of the times. We need not react to perceived excesses in knee-jerk fashion, but rather we must give thoughtful attention and act clearly to serve the general good.

Emmett B. Mathiasen M.D.

Emmett B. Mathiasen, M.D.
President

Questions and Answers — *An Interview With*
Laverne Wintermeyer, M.D.
Iowa State Department of Health

AIDS Concerns In Iowa

Laverne A. Wintermeyer, M.D. is State Epidemiologist and Director of Infectious Disease Control for the Iowa State Department of Health; he's served as such for 9 years. Dr. Wintermeyer is also a clinical associate professor in the Departments of Pediatrics and Preventive Medicine at University of Iowa Hospitals and Clinics.

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) is an incurable disease generating extensive concern in the medical community and alarm in the general population. It has been declared America's No. 1 health priority by the federal government. Mirroring the national trend, AIDS cases in Iowa are on the increase. In this month's expanded Q & A feature, Laverne Wintermeyer, M.D., of the Iowa State Department of Health, discusses the AIDS situation nationwide and in Iowa. He provides information of vital interest to Iowa physicians.

In recent months, we've been hearing more and more about the spread of AIDS. How prevalent is the disease?

Currently, there are almost 11,000 cases in the United States and this number is expected to double in the next year. Almost 75% of these cases have occurred in the gay population and 17% among intravenous drug users, classifying both of these groups as high risk. One percent have contracted the virus through blood transfusions and another 1% are heterosexuals having contact with a high risk group. Seven percent don't fit into any group. So far, most cases have occurred on the east and west coasts.

How many reported cases are there in Iowa?

We have had 12 cases and none of the victims have been shown to have acquired the disease in Iowa. The first case was diagnosed here in 1983, followed by 5 cases in 1984 and 6 cases so far this year. Five of these AIDS victims have died; another 8 have come into the state and died after being diagnosed in other states. It can be expected that the number of cases diagnosed in Iowa will increase.

As the media focuses increased attention on AIDS, fear of the disease seems to intensify. Is this fear justified?

There is concern that AIDS is spreading to the heterosexual population, but there's no need for great alarm concerning acquiring the disease if people maintain a certain lifestyle. AIDS is transmittable only by introduction of body fluids from an infected person into the body of a susceptible person — not by shaking hands or from a toilet seat. In Iowa so far, there have been no proven cases of AIDS transmitted through transfusion, but we are investigating one possible case now.

The Iowa State Department of Health now classifies AIDS as a reportable disease. What does this mean for physicians?

Because AIDS is now a reportable disease, every Iowa physician is responsible for reporting suspected cases to their local and state health departments. The Department of Health investigates and collects data on all cases, institutes control measures where necessary and maintains surveillance. We have also attempted to supply information to all Iowa physicians concerning AIDS reporting and testing procedures.

We understand that the Department of Health now has an AIDS hotline.

The AIDS Hotline, 1-800-532-3301, was recently established through use of federal funds earmarked for a number of AIDS research and management projects. The hotline can be used by doctors, nurses or anyone else who has a question about AIDS. We are receiving many calls on the hotline. Some are from medical personnel but most come from citizens.

What are the latest developments in the area of AIDS testing?

A new test, HTLV-III, is now available for detection of antibodies to the virus which causes AIDS. The test is done free by the Hygienic Laboratory at the University of Iowa. Physicians can simply draw a blood sample and send it to that lab. Physicians should direct questions regarding laboratory procedures to the Hygienic Laboratory, 319-353-5990. The test was designed to screen blood used for transfusions. Recently, all Iowa blood banks began utilizing the test and discarding blood positive for antibodies to this virus.

How accurate is the HTLV-III test?

The test is like AIDS itself in that there is still much to learn about it. Physicians need to remember that the test produces many false positives. We ask that physicians exercise good judgment as to the HTLV-III test and use it only for suspected AIDS cases — not for screening purposes. Due to the frightening implications of a positive test, it is also imperative that physicians provide counseling for patients who are going to receive the test and maintain strict confidentiality.

AIDS Facts For Iowa Physicians

Here is a short AIDS information checklist with which Iowa physicians should be familiar.

- **AIDS is now classified as a reportable disease.**
- **The Iowa State Department of Health has established an AIDS Hotline, 1-800-532-3301.**
- **AIDS is transmittable only through body fluids.**
- **Iowa blood banks are now screening all blood for presence of antibodies to the AIDS-associated virus.**
- **Physicians with questions concerning AIDS testing procedures may call the University of Iowa Hygienic Laboratory, 1-319-353-5990.**
- **The ISDH maintains a list of physicians available to assist in counseling patients with positive AIDS test results.**

What is the procedure for patients who have positive HTLV-III test results?

If the initial test is positive, a second and different test will be performed to determine as much as possible the validity of the results. Post-test patient counseling is more complex that pre-test counseling and should only be done by someone skilled in allaying fears and anxieties. Literature on this aspect of AIDS is available from the Department of Health. If a physician does not feel qualified to counsel a patient with a positive test, the Department of Health also maintains a list of physicians who have volunteered to do this counseling.

AIDS reporting, testing and counseling aside, are there other ways Iowa physicians can assist the Department of Health?

One of our major concerns at the present time is that we'll have an outbreak of unnecessary fear and hysteria, and physicians should make efforts to alleviate anxiety over AIDS in the general population. People ought to be concerned enough to structure their lifestyle to avoid the virus, but physicians can help prevent undue fear by explaining its low level of transmittability.

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OB/GYN FELLOWSHIP PROGRAM — September 27-28, 1985

A two-day continuing education program in Obstetrics and Gynecology for primary care physicians will be held at Holling Education Center, Immanuel Medical Center, Sept. 27-28, 1985. This program is designed to enhance physicians' diagnosis, treatment and follow-up skills in caring for obstetrical and gynecological patients. Continuing Medical Education (CME) credits are offered for participation in the program.

Spouses are invited to participate in special activities; participants and faculty will enjoy an evening of elegant "dining out" together on Friday, Sept. 28. Participants are housed at the Immanual Plaza Motel on the Medical Center campus.

An agenda for the two-day program is as follows:

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Hypertensive Disease of Pregnancy
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Premature Rupture of the Fetal Membrane
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The Management of Erythroblastosis Fetalis
G. William Orr, M.D.
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Peggy J. Rapoport, M.D.
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SECOND DAY

Management of Postdatism
G. William Orr, M.D.
Diagnostic Imaging in OB/GYN
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Alphafetal Protein
Mark Lubinsky, M.D.

For more information on this or future Fellowships, contact Marion Kaple, Holling Education Center, Immanuel Medical Center, 6901 North 72nd Street, Omaha, Nebraska 68122, (402) 572-2340.

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Coronary Bypass Surgery
David A. Hughes, M.D.
Current Methods of Myocardial Infarction Reduction
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Michael M. Dehning, M.D.
Case Studies
Richard E. Collins, M.D.
Michael M. Dehning, M.D.

Second Day

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Acquired Immunodeficiency Syndrome in a Small Community

SHIONG S. LEE, M.D., and
STUART T. GUTTMAN, M.D.
Mason City, Iowa

AIDS may not occur often in a smaller Iowa community, but it can and does. This case report is testimony to that fact. The authors indicate that Iowa physicians should be alert to the possibility.

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) has gained increasing medical attention since 1981.[1] The likelihood of AIDS being caused by an infectious agent, the retrovirus group (HTLV-III), is becoming more apparent.[2] AIDS has been empirically defined by the CDC,[1, 3] as follows: a reliably diagnosed disease indicative of underlying cellular immunodeficiency (such as Pneumocystis pneumonia, other opportunistic infections, or Kaposi's sarcoma in a person younger than 60 years of age), in the absence of known causes of immunodeficiency (e.g., use of immunosuppressive therapy or the presence of lymphoreticular malignancy).

The authors are associated with North Iowa Medical Center and St. Joseph Mercy Hospital in Mason City, Iowa.

A typical case of AIDS is reported with an unusual pulmonary complication. This case report is intended to draw more attention to this new disease, even in a non-metropolitan small community.

Case Report

A 36-year-old male Caucasian with a homosexual background was referred for multiple purplish macules over upper chest, head, neck, and lower extremities lasting several months. Biopsies of the skin lesions confirmed Kaposi's sarcoma (Figure 1). Tuberculin and candida antigen skin tests were nonreactive, revealing anergy. The peripheral blood revealed a mild leukopenia (WBC: 4500/μl) with relative lymphocytosis (45%). Its T and B cell



Figure 1. Multiple purplish macules over upper chest and neck were confirmed as Kaposi's sarcoma by biopsy.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF AUGUST 1985

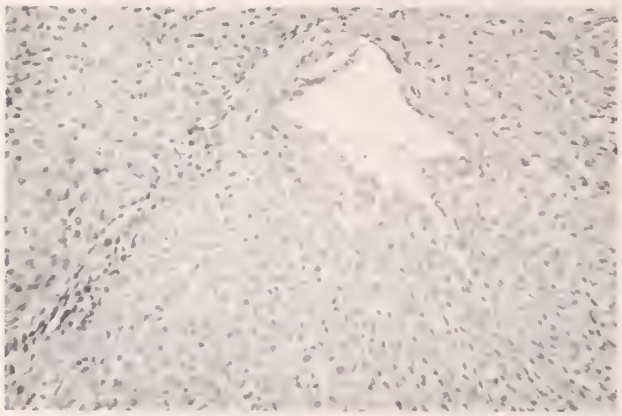


Figure 2. The biopsied lung tissue illustrating all the alveolar spaces are filled with desquamated pneumocytes and histiocytes. The junction of a respiratory bronchiole and alveolar duct remains patent (H & E stain x 200).

surface markers showed B cell 6.7%, T cell 69.3% and the T-helper/T-suppressor (T_H/T_S) ratio was 0.2 (normal >1). A bone marrow study from the iliac crest exhibited hypocellular marrow with mild lymphocytosis and depression of myeloid series. Serum protein electrophoresis disclosed a polyclonal gammopathy.

The patient developed dyspnea with an arterial oxygen pressure (PaO_2) of 65 mmHg on room air. A chest x-ray revealed bilateral diffuse interstitial infiltrations. A fiberoptic bronchoscopy and multiple transbronchial biopsies with aspiration were performed. The biopsied lung tissue displayed a conspicuous diffuse, desquamative and interstitial pneumonitis (Figure 2). No Pneumocystis or other organisms were found on histology or culture of the specimen. The patient was referred to the National Institutes of Health for further management and succumbed to respiratory failure about 2 months after the diagnosis of AIDS was established.

Discussion

There are 4 major risk groups for AIDS: (1) homosexual or bisexual men account for 71% of all cases reported in the United States; (2) intravenous drug abusers constitute 17% of total patients; (3) Haitian entrants into the United States comprise about 5% of the reported cases; and (4) hemophiliacs represent less than 1% of cases.[4]

In this case report, the clinical manifestation of Kaposi's sarcoma with homosexual background, laboratory findings of anergy on skin tests, and depression of T_H/T_S ratio (0.2) showed convincingly a classic case of AIDS.

Although Pneumocystis carinii or other opportunistic infections are common pulmonary complications with AIDS,[5] the transbronchial biopsy and aspiration specimens in this patient confirmed neither Pneumocystis nor other opportunistic infection; however, a characteristic, diffuse, desquamative, interstitial pneumonitis (DIP) is demonstrated. To the extent of our knowledge, DIP has not been well documented as a pulmonary complication of AIDS. Unfortunately, autopsy study was not granted; thus further firm confirmation of DIP is not available.

Epidemiologically, the initial cases of AIDS were reported in New York and California. Subsequent cases were seen in other regions. Up to January 1984, 42 states, the District of Columbia and Puerto Rico have reported AIDS outbreaks.[6] Our patient is believed to be the third well-documented case in the State of Iowa. It is worth emphasizing that this new disease is no longer limited to both east and west coasts of the United States nor to metropolitan areas; sporadic cases may be encountered even in a small community. Iowa physicians need to be aware of this possibility.

Summary

A case of typical acquired immunodeficiency syndrome is described. Its origin is a small community in the State of Iowa. It involved an unusual pulmonary complication. This case report may help increase awareness of this disease and underscore the need for early diagnosis in similar cases.

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Retrovirus-Like Particles In Hodgkin's Disease

KYUNG-WHAN MIN, M.D., and
JOSEPH SONG, M.D.
Des Moines, Iowa

Lymphoid follicles in 6 patients with Hodgkin's Disease were all found to have varying numbers of retrovirus-like particles along the filiform dendritic processes of follicular dendritic reticulum cells. Attention is drawn to the fact that HD and AIDS share many unique clinicopathologic characteristics. Future investigations of lymphotrophic retroviruses are proposed to determine the etiology of Hodgkin's Disease.

Hodgkin's Disease (HD) has many unique clinicopathologic features which resemble chronic infectious disease and the lymphomatous process. As a consequence, there is controversy about the nature of HD.

Epidemiologic observations, i.e., wide geographic variations,[1] different age prevalences by socioeconomic status,[2] and bimodal age incidence,[3, 4] offer the hypothesis that Hodgkin's Disease is caused by an infectious agent, most likely an ubiquitous putative virus.[5] The Epstein-Barr Virus (EBV) fits the hypothesis most closely since it is shown that persons with a history of infectious mononucleosis have 2 or 3 times increased risk of HD.[6, 7, 8] However, a recent population-based study[9] revealed significant elevation of antibody titers to the viral capsid antigen of EBV only in 39% of cases and suggested an indirect role of EBV in the pathogenesis of HD.

Order and Hellman summarized the unique features which distinguish HD from other malignant diseases. They hypothesized that Hodgkin's Disease is caused by a tumor-inducing virus which causes a change in cell-surface antigen of T cells.[10] They claimed that complex clinicopathological features of HD result from an interaction of normal T cells against the virus-transformed cells in a fashion similar to a chronic graft-versus-host reaction, including eventual production of neoplastic reticulum cells. In this context it is interesting that there is remarkable similarity in lymphadenopathy syndrome of acquired immunodeficiency syndrome (AIDS)[11, 12] and HD. In the former, a new lymphotrophic retrovirus (HLTV-III) was successfully isolated from patients with AIDS,[13, 14] and retrovirus particles presumed to be HLTV-III have been demonstrated in the germinal centers (GC) of lymph nodes of AIDS patients.[15]

For these reasons we have studied germinal centers of the lymph node specimens from six patients with HD by electron microscopy and found retrovirus-like particles in all, herein reported.

Materials and Methods

Forty-three cases of HD were examined in our electron microscopy laboratory. In each fresh lymph nodal tissue, obtained surgically,

The authors are associated with the Department of Pathology, Mercy Hospital Medical Center, Des Moines, Iowa. This paper is supported by a grant from the Mercy Hospital Foundation.

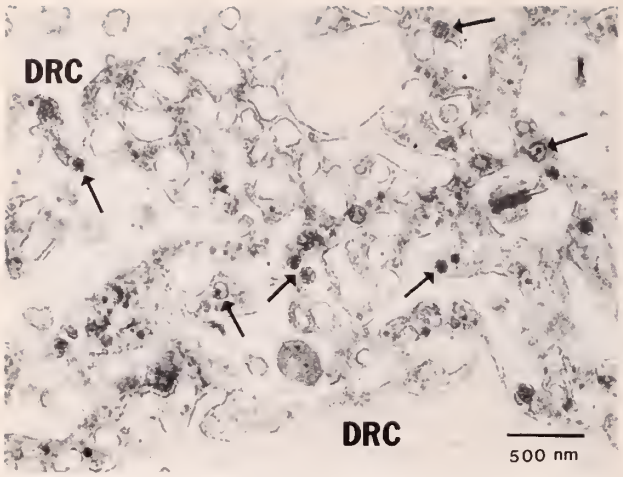


Figure 1. An electron micrograph of the germinal center of a mesenteric node of a 12-year-old girl having Hodgkin's Disease, nodular sclerosing type. There are numerous extracellular round enveloped particles with electron-dense core along the filiform processes of follicular dendritic reticulum cells (DRC).

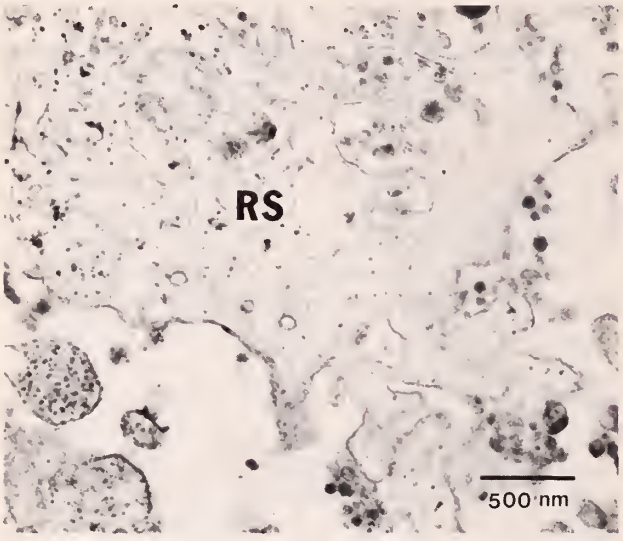


Figure 2. An electron micrograph of the lymph node of a 26-year-old female diagnosed as Hodgkin's Disease, nodular sclerosing type. Extracellular retrovirus-like particles were found along Reed-Sternberg Cells (RS).

was fixed in 2.5% glutaraldehyde and post-fixed in osmium tetroxide, then embedded in Epon Araldite or similar resins. In all cases, at least 10 blocks were available and 1 micron-thick sections stained with Toluidin Blue were screened for the presence of GC; they were found in 6 cases. Ultra-thin sections of the GC were double stained with uranyl acetate and lead citrate for study with a 100 S JEOL electron microscope.

Light microscopically, four showed nodular sclerosing type and 2 mixed cellularity type. The patients were all female, one in the second decade, three in the third decade and two in the eighth decade.

Results

On light microscopy, the GC were mostly small and made up of aggregates of vesicular nucleated cells with rather prominent connective tissue proliferation, usually associated with prominent capillaries. Occasional speckling of mature lymphocytes and plasma cells was seen. Either rare or totally absent were typical lymphoblasts or transformed lymphocytes in contrast to the usual hyperplastic follicles. The GC consisted mainly of dendritic reticulum cells (DRC) having complicated intertwining villous projections embracing homogeneously to finely granular extracellular electron dense material with frequent retrovirus-like particles (Figure 1). Retrovirus-like particles ranged from 90 to 110 nm in diameter and consisted of a smooth outer membrane and variably electron-dense core. No budding particles were seen. Occasional aggregates of similar particles were seen on the edges of Hodgkin's cells (Figure 2) in 2 cases.

Comment

The extracellular particles along the complicated dendritic processes of DRC in the GC from 6 patients with HD, herein reported, bear close resemblance to those of recently discovered HLTV retroviruses.[14, 15] They were extracellular and consisted of an outer envelope and electron-dense core, typical of RNA viruses.[16] They were frequently found in 5 cases and scarcely in one. They were found only in the GC along the villiform processes of DRC's in 4 cases and also along reactive reticulum cells having the ultrastructural appearance of Reed-Sternberg cells in 2 cases. There were no budding forms found, suggesting that they are not actively replicating at these sites.

When this is considered with the fact that the particles were seen extracellularly in a rather electron-opaque background and closely embraced by the dendritic process of DRC, it is probable these retrovirus-like particles were trapped in a form of antigen-antibody. This is noted since such antigen trapping has been well demonstrated experimentally and DRC plays a central role in the antigen processing in the immune reaction.[17, 18]

Nevertheless, these particles closely resembled retroviruses in general and human T-cell lymphoma-related viruses (HTLV) in particular. In this regard, it is noted that many similarities in clinicopathological characteristics exist between HD and AIDS-related syndromes, including T-cell abnormalities and cell-mediated immunodeficiency,[19, 20] lymphadenopathies characterized by hyperplastic follicular reactive change, which eventually evolve into rather atrophic follicles and neoplasm[13, 21] and now demonstration of retrovirus-like particles along the DRC in germinal centers.

In AIDS and AIDS-related syndrome, HTLV-III has been repeatedly isolated and elevated antibody titers of HTLV-III have been demonstrated not only in the majority of AIDS and AIDS-related patients, but also in individuals in the high-risk group, linking it to the etiology of AIDS.[14]

Summary

Our finding of retrovirus-like particles in patients with HD provides a further analogy between these two diseases and suggests that a retrovirus (viruses) may also be involved in the pathogenesis of HD. Furthermore, it seems to provide the missing link to the otherwise excellent hypothesis of Order and Hellman. They proposed a tumor-inducing virus which caused a change in cell-surface antigen of T cells to trigger a complex chronic interaction between the normal and antigenically altered lymphocytes. This has been characterized as a lymphocytic civil war by Devita[22] resulting in HD.

Although the true nature of retrovirus-like particles herein reported remains to be determined, our findings will support future investigative efforts to determine if the etiologic agent in HD should also be directed to HLTV-related viruses. In this regard, it is of further interest to note that the occurrence of Hodgkin's Disease in patients with AIDS[23] is being reported.

References

The references noted in this paper are available either from the authors or from IOWA MEDICINE.

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COMMENTING EDITORIALLY



PROFESSIONAL LIABILITY TELECONFERENCE

On June 3, the AMA presented a special live nationwide television conference on professional liability. This teleconference was sponsored by the Iowa Medical Society and county medical societies in Cedar Rapids, Dubuque and Des Moines. Participants represented medicine, law and insurance; the consumer was not directly involved in the discussions.

The teleconference offered an overview of the current crisis in professional liability insurance. Representatives of the Illinois State Medical Association and the California Medical Association reviewed progress made by those organizations. The immediate past president of the American Society of Anesthesiologists discussed actions of that group. A representative of the American Trial Lawyers Association questioned whether a problem really exists. Further discussion was provided by Drs. James S. Todd and James H. Sammons, who represented the AMA. We also heard from an attorney and an insurance executive.

The discussion was interesting, but it left questions in my mind. It appears each faction is blaming the others for the problems and that no broadscale cooperative effort has evolved.

Certainly there is much to be done about the problem. The various professions must work together, educating themselves as well as the public concerning the magnitude of the professional liability crisis — a crisis not only in our profession but in others such as manufacturing, food production and general services. The public must be brought to realize that, in the long run, they pay the price while others reap the benefits. M.E.A.

IS ONE KNIFE ENOUGH?

There is an interesting editorial in the May 25, 1985 edition of THE LANCET entitled "One Knife is Enough." This short commentary is based on a study of the ritual of using several knives during a surgical procedure.* The time-honored practice is for surgeons to use one scapel for the skin incision, discard it and demand another for deeper dissection. This tradition grew out of studies done in the 1890's and has, for the most part, remained unchallenged.

Can it be this is nothing more than a ritual passed on to resident surgeons by their mentors? Bacteriologic studies have not confirmed that normal skin harbors pathogenic organisms. The editorial concludes that the use of two knives is a "wasteful and unnecessary ritual" with no theoretical, scientific or clinical basis.

This whetted my curiosity. How extensive is the practice here, and what is the given rationale? Most of the surgeons I questiond do use a separate knife after the initial skin incision. Their reasons were vague . . . *soiled by skin, dulled by skin or no particular reason at all.* I learned that some who specialize in plastic surgery use several knives because the blades become "dull."

(Please turn to page 359)

* Hill, R. et al, Changing knives a wasteful and unnecessary ritual. Am. R. Coll. Surg. Engl. 1985, 67:149-151.

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Historical Vignettes

LOOKING BACK

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ON FEE SPLITTING

"SUCH DIVISION of fees," said one prominent surgeon and physician of Iowa City and the university, "is justifiable, when properly conducted. For example, if a doctor induces a patient to undergo an operation, when that patient had been recalcitrant and perverse in refusing to go to the table, even though his or her health and even life depends upon an operation, the doctor who wins his point has done a good deal for humanity, and deserves reward." . . . "On the other hand, the surgeons who operate in university hospitals, may receive large sums from the man under the knife, in the way of fees — maybe getting $100 or $150, or even more for a few minutes wielding of the steel blade — whereas the foreign doctor, who worked up the case, might not have received that much in the course of months of day and night service to the patient at home." . . . "Any doctor working up a case in such fashion is entitled to a piece of ultimately-paid fees, following the operation, both as a matter of equity, ethics and good business." — *Editorial*, JOURNAL OF THE IOWA STATE MEDICAL SOCIETY 1911; Vol 1:127.

EDITORIALS

(Continued from page 357)

I then became curious about cost factors. The people who deal in such things at Mercy Hospital Medical Center in Des Moines informed me that sterilizing a knife handle costs 18 cents and a No. 10 knife blade costs 31 cents. Granted, the addition of 49 cents per knife blade used may seem small, but when multiplied many times over can amount to a considerable cost factor for a hospital and ultimately for the patients. Is this justified by any valid data? M.E.A.



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Recent Highlights

U. OF I. COLLEGE OF MEDICINE

ARTHUR NOWAK, Pediatrics, is the director of a statewide dental program that offers many disabled children, and young adults of low-income Iowa families, free dental treatment. The UI is cooperating with the Iowa State Department of Health in sponsoring the program, called Dental Care for Persons With Disabilities. Eligible persons up to age 21 can receive preventive and restorative dental care at no cost; orthodontic treatment is not available. Nowak urges professionals who know of children eligible to participate in the free dental program to contact him now while funds are available. More information on the program is obtained by calling 319/353-7174.

UI STROKE RESEARCH BREAKTHROUGH may help physicians prevent potentially fatal complications that follow strokes. Researchers headed by ***Reynold Spector,*** *Internal Medicine & Pharmacology, located a transport mechanism in the brain that filters out leukotrienes, naturally occurring but potentially harmful body chemicals.*

UI COLLEGE OF MEDICINE PHYSICIANS were part of a nationwide study finding that mastectomies do not offer better survival rates than less radical treatment. The National Surgical Adjuvant Breast Project study indicated that, for certain types of breast cancer, surgical removal of tumor and axillary lymph nodes, along with breast radiation, is as effective as removing the entire breast and axillary nodes. ***Peter Jochimsen,*** *Surgery, headed the UI study.*

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THREE UI PHYSIOLOGY RESEARCHERS have found another piece in the puzzle of how humans and other mammals can breathe continuously for the extent of their lives without having to think about breathing. ***Michael Dekin, Peter Getting*** *and* ***George Richerson*** *found that thyroid releasing hormone — a pituitary-produced hormone which acts on the thyroid gland to stimulate various metabolic functions — also sends the brain a chemical message that stimulates breathing.*

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THE SPACE SHUTTLE "DISCOVERY," launched April 12, carried a UI medical college experiment that was successful in growing large crystals of DNA. Researcher ***Arthur Arnone,*** *Biochemistry, says the experiment should help scientists take a closer look at these "building blocks of life."*

A UI STUDY OF PROSOPAGNOSIA, the rare neurological disorder affecting ability to recognize visually the faces of familiar persons, is providing a new way of looking at brain function. Neurology researchers ***Daniel Tranel*** *and* ***Antonio R. Damasio*** *analyzed prosopagnosics' autonomic nervous system responses and found that a sector of their*

brains was responding at some level to familiar images, even though the results were not coming to consciousness. The new UI findings indicate that visual recognition is processed in the brain in a step-like manner — that recognition is not an absolute "recognize" or "not recognize" situation.

***P. MICHAEL CONN,** Head of Pharmacology, has won the Richard E. Weitzman Memorial Award of The Endocrine Society for his contributions to understanding of the molecular mechanism of action of gonadotropin releasing hormone (GnRH). The society noted that the work of Conn and colleagues in regulation of pituitary function "now shows great potential for clinical utility." Conn's work with GnRH recently also won him the John Jacob Abel Award of the American Society for Pharmacology and Experimental Therapeutics.*

***DEAN JOHN W. ECKSTEIN,** Internal Medicine, is one of 29 individuals recently elected to membership in the Institute of Medicine, chartered in 1970 by the National Academy of Sciences "to enlist distinguished members of medical and other professions for the examination of policy matters pertaining to the health of the public." The 460 Institute members are chosen for their demonstrated interest, concern and involvement with problems and critical issues affecting health.*

***AT A GLANCE: Nancy Goeken,** Internal Medicine, is president-elect of the American Society of Transplant Physicians. Goeken is the sole histocompatibility immunologist on President Reagan's Task Force on Transplantation. She also is on the staff of the Veterans Administration Medical Center, Iowa City. . . . **Gary Hunninghake,** Internal Medicine, is president-elect of the 12,000-member American Federation for Clinical Research. . . . **Robert Karr,** Internal Medicine, was elected to serve a five-year term as National Councillor of the American Federation for Clinical Research. . . . Two other members of the internal medicine faculty — **Robert Clark** and **Phillip Schmid** — have been elected to membership in the Association of American Physicians, generally recognized as the most prestigious association for academic medicine.*

This report has been compiled by The University of Iowa Health News Service.

MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS

UPDATE ON SLEEP DISORDERS

SEPTEMBER 10, 1985

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MELVIN LOPATA, M.D.
UNIVERSITY OF ILLINOIS AT CHICAGO
CHICAGO, ILLINOIS

CHRISTIAN GUILLEMINAULT, M.D.
SLEEP DISORDERS CLINIC
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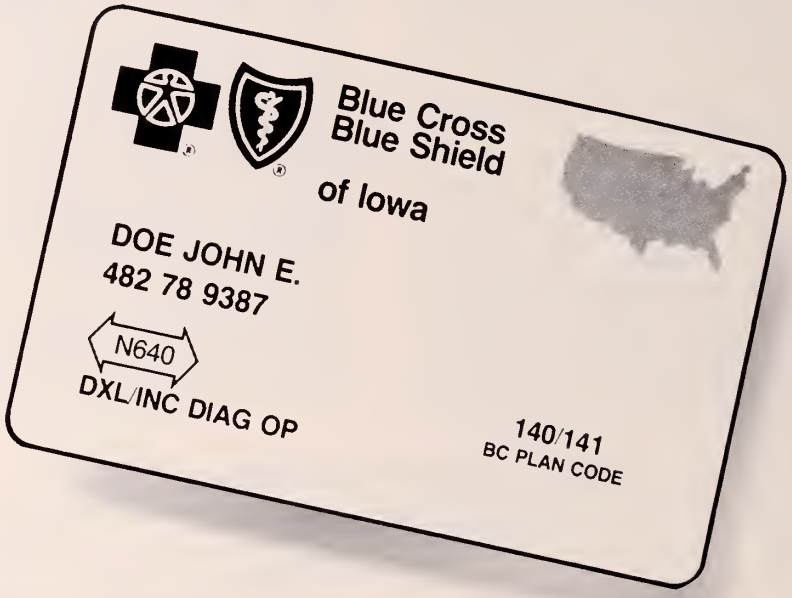
PANEL DISCUSSION ON PROBLEMS IN THE TREATMENT OF SLEEP DISORDERS

A.M.A. Approved for 6 hours Category I of the Physician's Recognition Award of the American Medical Association. Nursing CEU's: .6 (6 contact hours) Other CME accreditations are pending.

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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C:* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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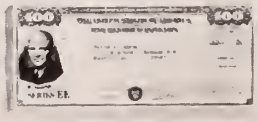


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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



"LEONARDO WAS NOT A GENIUS"

I RECENTLY FELT delight at hearing a distinguished hydraulic engineer lecture about Leonardo da Vinci's prowess in hydraulics. The professor surprised his audience with the bold statement that Leonardo was not a genius, although yes, a very bright man who was immensely interested in a great many things, who gave enormous energy to pursue those interests, and indeed was a man of several intelligences. The statement seemed so startling because I imagined Leonardo would appear on the list of practically anybody who was asked to name some geniuses. The speaker didn't offer his own definition of genius, but his criteria, clearly, must be tough.

Was Leonardo just a run-of-the-mill Renaissance man? Was every man who lived during what we call the Renaissance a Renaissance man? (I won't even say every *educated* man, because Leonardo, being a bastard of low birth, was given no formal education.) Certainly, being interested in lots of things, which is what most of us probably mean when speaking of a Renaissance man, is not the same as genius. Or does being a Renaissance man in non-Renaissance times require not only interest but excellence in many things? By any criteria, Leonardo qualifies as a Renaissance man, even if not a genius.

It's all very precise to state that an IQ of 140 or above makes one a genius, but psychologists writing about intelligence seem to grant that genius is a far more complex matter than the amassing of IQ points and requires elements of creativity, originality and effectiveness. My dictionary lists a large paragraph of meanings, all of which boil down to "all of the above, plus more." (A fascinating bit of sexist etymology was there: the word originally was related to a male generative or creative principle, and thus is linked to such words as genital and progenitor.)

All normal people, I think it's safe to argue, have many interests, but there is certainly a distribution curve on which some people show an unusual diversity of interests. More important to the definition is to have a high level of skill or accomplishment in many areas, or to have that kind of accomplishment in many coupled with, perhaps, enormous skill in one area. Simply attaining great fame, even lasting fame, or making lots of money are certainly not satisfactory criteria.

Leonardo's being "a man of several intelligences" reminded me of an interesting recent book that has provoked much interest, entitled *Frames of Mind: A Theory of Multiple Intelligences* by Howard Gardner. He identifies 7 categories that in his opinion cannot be reduced further, and which are sufficiently different from each other that they warrant being considered as separate intelligences. Obviously, this does not accommodate the notion of there being some unitary, overall factor of intelligence, a theory that held sway in the early days of psychometric testing.

Do you know of anyone, living or dead, that you would consider a medical genius? If you think of someone who qualifies, does that person come to mind because of accomplishments in research? In clinical practice? In teaching? In attaining some notoriety among the profession or the public? Or is it because of a broad profile of accomplishment?

A recent issue of *JAMA* that carries the

(Please turn to page 373)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

DIURETIC UPDATE

According to a recent survey,[1] hydrochlorothiazide is the chemical entity most prescribed. Other diuretics in the list of most prescribed chemicals are triamterene at number 6 and furosemide at number 11. In addition, potassium, which is given to replace excessive loss of this ion by diuretics, is the seventh most prescribed chemical. The high usage of these substances suggest that a review of current information on diuretics would be in order at this time.

The principal classes of diuretic agents are thiazides (including thiazide-like agents), loop (or high ceiling) agents, and potassium-sparing agents. While no new classes of agents have been marketed in recent years, new drugs have been added to these classes, and new uses have been developed for all the classes.

Thiazides. Examples of drugs in the thiazide class of agents are chlorothiazide and hydrochlorothiazide, whereas chlorthalidone and metolazone are examples of thiazide-like agents. These drugs possess moderate diuretic activity, blocking about 5 to 8% of sodium chloride reabsorption. Their primary site of action is on the luminal membrane of the distal convoluted tubules where they block the active reabsorption of sodium. While the site and degree of inhibitory activity are similar for all of the thiazides, their duration of action varies markedly. Half-lives vary from 1½ to 44 hours (Table 1).

Most of the toxicity seen with the thiazides is the result of excessive renal actions. Such effects include sodium depletion, metabolic alkalosis, potassium depletion, and uric acid retention. Of these, the loss of potassium has received considerable attention. This is in spite of the fact that plasma levels must usually fall below 3 mEq/l before symptoms occur. If, however, a cardiac glycoside is also being used, smaller decreases in potassium levels may increase the activity of the glycosides and lead to intoxication. If it is deemed necessary, potassium losses may be prevented or replaced by diet, supplements, or concurrent use of potassium-sparing agents. It should be pointed out that potassium excesses that can lead to toxicities such as cardiac arrhythmias are far more serious than deficits.[2] In addition, potassium is not tolerated by patients with renal insufficiency; and its administration to diabetics, the elderly, or patients taking captopril, certain nonsteroidal antiinflammatory agents, or beta-blocking agents can lead to hyperkalemia. An alternate approach in handling potassium deficits which does not require administration of potassium or another drug is to decrease the amount of sodium in the diet. With less sodium to act upon, smaller doses of thiazides are needed to excrete the smaller quantity of sodium. As sodium excretion falls, potassium excretion will also fall, since its excretion is dependent upon sodium loss. Other toxicities include impaired glucose tolerance, pancreatitis, and nonocclusive intestinal infarction. It has been proposed that there may be a relationship between excessive volume loss induced by the diuretics and these latter toxic effects. In addition, allergic responses ranging from skin rashes to blood dys-

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

crasias have been reported. The more severe immunological responses are rare.

Loop agents. The loop or high ceiling agents include furosemide, ethacrynic acid, and bumetanide. These are the most potent diuretics available and are capable of inhibiting up to 25% of filtered sodium chloride reabsorption. The principal site of action of these agents is on the luminal membrane of the ascending limb of the loop of Henle where they block the active reabsorption of chloride ions and the passive reabsorption of sodium ions. Since the loop agents as well as the thiazides act upon luminal membranes, urinary excretion rates of these agents rather than plasma levels correlate best with diuretic activity.

The side effects of the loop agents are very similar to those of the thiazides. Sodium depletion, metabolic alkalosis, and hypokalemia occur and may be more severe. Uric acid retention, impaired glucose tolerance, pancreatitis, and nonobstructive intestinal infarction are also possible. In addition, the loop agents, when used at large doses, may cause loss of hearing. It is claimed that bumetanide may be less ototoxic than furosemide. This is based on the fact that it is 40 times as potent on a mg basis as a diuretic but of equal potency in regard to ototoxicity. It has been assumed that if equinatriuretic doses are employed, then bumetanide should be less ototoxic. In addition to the toxic effects above, ethacrynic acid also produces severe gastrointestinal symptoms.

Potassium-sparing agents. The potassium-sparing agents decrease the excretion of potassium while increasing the excretion of sodium. These drugs act upon the collecting tubules affecting reabsorptive and exchange mechanisms located here. Agents in this class include spironolactone, a competitive inhibitor of aldosterone, as well as triamterene and amiloride which act to decrease the permeability of the collecting tubules to sodium. These agents are less potent than the other 2 classes, affecting only 2 to 4% of sodium reabsorption. The activity of spironolactone is limited by the presence of aldosterone. In the absence of the hormone, it is not active. Furthermore, it has an onset of action of several hours. This is due to the time necessary for catabolism of proteins previously synthesized by aldosterone.

The toxic effects of this class of agents differ considerably from those seen with the more potent agents. Potassium retention can occur and this can lead to serious cardiac arrhythmias. Thus, these agents should not be used with potassium supplements or diets high in potassium. Spironolactone is also a weak androgenic compound and produces masculinizing effects in women and children. In males it produces feminizing effects because it antagonizes the effects of testosterone. Spironolactone also carries a cancer warning because it has been found to induce tumors in laboratory animals. Gastric upset may be a limiting side effect of triamterene and amiloride.

The pharmacokinetics of the diuretics are shown in Table 1.

TABLE 1
COMPARISON OF AGENTS*

	% Absorbed	% Bound	Cl_T ml/min	V_d L/kg	$T_{1/2}$ hours	Cost†
Thiozides						
Chlorothiazide	9	95	315	0.2	1.5	10
Hydrochloro-thiazide	71	64	340	0.8	2.5	1
Chlortholidone	65	75	110	3.9	44	4
Metalazane	90+	95	65	1.6	20	5
Laap ogents						
Furasemide	60-69	96	150-250	0.11	1-2	1
Ethacrynic ocid	100	90-95	20-80	0.10	1.6	16
Bumetonide	90	96	100-375	0.14	1-1.5	14
Potassium-sparing agents						
Spironoloctone	varies	90+	21	0.05	2	16
Triomterene	30-70	67	500-1000	2.5	2-4	15
Amiloride	30-50	23	400-600	5	6-9	17

Cl_T = total clearance. V_d = volume of distributian. $T_{1/2}$ = half-life af drug. Data fram reference 3.

*It shauld be nated that the pharmacakinetic data shawn abave can be markedly altered in the presence af renal disease. This is particularly true far diuretics like furasemide which are eliminated primarily by the kidneys. Cl_T is decreased and $T_{1/2}$ is increased accardingly.

†Usual cast ta the pharmacist based an usual daily dasage and frequency (chlarathiazide 500 mg, BID; hydrachlarathiazide 50 mg/day; metalazane 5 mg/day; chlarthalidane 50 mg/day; furosemide 40 mg/day; ethacrynic acid 50 mg/day; bumetanide 1 mg/day; spiranalactane 25 mg, QID; triamterene 100 mg/day; amilaride 5 mg/day). Numbers represent cost in camparisan ta lawest cast agent [1].

Therapeutic Uses of Diuretics

Edematous Conditions

In the various edematous conditions, opinions vary as to whether a thiazide or a loop agent should be employed first. An advantage of the thiazides is that they have very flat dose response curves in contrast to the steep curves of the loop agents. Thus they are relatively safer to use. If, however, the response to a

(Continued from page 365)

thiazide is not adequate, then a loop agent should be used. Since ethacrynic acid produces marked gastric irritation, its use is limited. The chief value of this agent lies in the fact that it is so different structurally from the other loop agents and the thiazides which are all sulfamyl compounds. If an allergic response develops to a sulfamyl agent, the safest alternative is to replace it with ethacrynic acid. The potassium-sparing agents are not as efficacious as the thiazides or the loop agents and thus are less likely to produce a satisfactory response if used alone. They are employed primarily to offset the loss of potassium produced by the thiazides or loop diuretic agents.

Cardiac. Traditionally, diuretics have been used as a supplement to cardiac glycosides in the chronic treatment of cardiac decompensation. Several studies have shown that 50 to 70% of such cases, when valvular disease is not involved and if in normal sinus rhythm, can be treated satisfactorily with a diuretic alone.[5] This is advantageous since the toxicity of diuretics is much less than that of the cardiac glycosides. In the acute treatment of cardiac decompensation, there is evidence that furosemide is as useful alone as with a cardiac glycoside.[6]

Hepatic. In the treatment of the ascites of hepatic disease, the excess volume must be removed slowly since plasma volume is already decreased because of diminished plasma levels of albumin. A sudden loss of additional plasma volume could lead to circulatory collapse. Furthermore, these individuals are also frequently deficient in potassium due to elevated levels of aldosterone as a result of diminished metabolic breakdown of the hormone by the diseased liver. Thus they are very sensitive to further losses of this cation. The use of spironolactone, a potassium-sparing aldosterone antagonist, has been shown to be an effective treatment.[7] Furosemide, a loop agent, may be added if necessary. A potential problem of therapy is that the diuretic agents can produce metabolic alkalosis which leads to a decrease in ammonia excretion by the kidneys. Since ammonia metabolism in hepatic disease is decreased, a reduction in renal loss can cause plasma levels to increase and such changes can lead to the development of hepatic coma.

Renal. In the treatment of edema of renal origin, a loop agent is usually more useful than a thiazide. With fewer functioning nephrons, a more potent agent is likely to be more effective. In addition, the loop agents are capable of increasing renal blood flow, whereas the thiazides, particularly at higher doses, decrease renal blood flow. By increasing flow, the loop agents may help to improve renal function whereas the thiazides would cause a further deterioration. Another feature of the use of loop agents in the treatment of edema of renal origin is that dosage may be increased markedly if necessary to produce a diuresis.

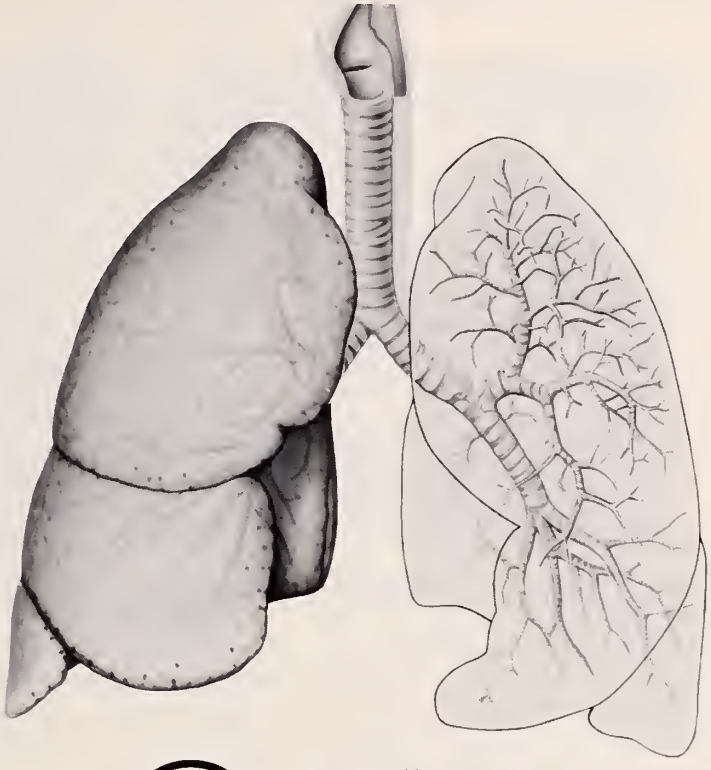
"A potential problem of therapy is that the diuretic agents can produce metabolic alkalosis which leads to a decrease in ammonia excretion by the kidneys."

For example, while the dose of furosemide is usually 40 mg/day, regimens have been published that call for up to 4 gm/day in patients unresponsive to usual doses.[8] These large dosages are possible because most of the toxic effects of the loop agents result from excessive renal actions. For some refractory cases, the use of a different loop agent may produce a diuresis. Metolazone may also be tried. While this is a thiazide-like agent, it appears to possess some proximal tubular activity and does not decrease renal blood flow as opposed to the other thiazides or thiazide-like agents. This agent also has been reported to potentiate the action of furosemide in the treatment of edema of renal disease.[9]

Acute renal failure. Because the loop agents increase renal blood flow, it was hoped that these agents might alter the course of acute renal failure. While some initial reports were encouraging, subsequent studies have shown that the period of oliguria is not significantly altered, nor is the number of dialyses required, nor is the mean period of renal insufficiency.[10] These drugs do increase urinary volume and

(Please turn to page 368)

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Brief Summary Consult the package literature for prescribing information

Indications and Usage: Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out

Precautions: *General Precautions* — If an allergic reaction to Ceclor* (cefaclor, Lilly) occurs, the drug should be discontinued and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly)

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy — Pregnancy Category B — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor* (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2-5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely

Hypersensitivity reactions have been reported in about 1-5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGDT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[0617B2R]

Note: Ceclor* (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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thus their use permits less restriction of fluids, which makes therapy and nutrition of such patients easier.

Pulmonary. In acute pulmonary edema, the loop agents, administered IV, can be life saving. Their use, here, is related only in part to their diuretic activity. Their primary benefit appears to be due to a vascular action which results in a decrease in venous tone. As capacitance vessels are dilated, blood volume is shifted. Improvement occurs as the volume in the pulmonary circuit is decreased, and this is usually before onset of diuresis.

Nonedematous States

Hypertension. The thiazides are frequently used as the initial or cornerstone drug in the treatment of hypertension. Alone, they produce only a modest decrease in blood pressure. The mechanism of this decrease appears to involve a lowering of plasma volume and an altered sensitivity of the arterioles to catecholamines. Their greatest value in hypertensive therapy is that they potentiate other agents, thus allowing lower doses of the more potent agents to be used (and hence fewer side effects). Their ability to potentiate other agents is related to the fact that they prevent retention of fluid, a side effect of many antihypertensive agents, which limits their activity. The loop agents do not appear to be as useful as the thiazides as antihypertensive agents. While they decrease plasma volume, they do not appear to alter artereolar sensitivity. They are the agent of choice, however, in hypertension associated with renal disease.

Hypercalcemia. Loop agents also block the tubular reabsorption of filtered calcium. Thus, they are used in the treatment of conditions associated with elevated levels of calcium such as hyperparathyroidism.

Calcium nephrolithiasis. The thiazide agents, when given chronically, decrease renal excretion of calcium by enhancing proximal tubular reabsorption of this cation. While used to prevent calcium stones, there is no evidence that they are effective for this purpose.[11]

Nephrogenic diabetes insipidus. In this condition, the nephrons do not respond to antidiuretic hormone. Consequently, large volumes of dilute urine are excreted by the kidneys. The chronic use of thiazides or loop agents is capable of causing about a 50% decrease in urinary volume.[12] The mechanism involves producing a loss of sodium. The resultant deficit causes an increased fraction of filtered sodium to be reabsorbed in earlier segments of the nephron. In the proximal tubule, water is reabsorbed as sodium is reabsorbed. Thus, these agents act to shift more water reabsorption to the proximal tubules and hence decrease water excretion. The decrease in urinary volume can be maintained only as long as there is a deficit of sodium.

In summary, the currently available diuretics have proven to be extremely useful agents in the management of edematous diseases as well as several nonedematous conditions. While these agents may produce serious toxic actions, most of these are due to excessive renal actions. If the agents are carefully monitored, their toxicity can be limited. It can be concluded that the current diuretic agents are indeed worthy of their high usage. — H. E. Williamson, Ph.D., *Professor of Pharmacology.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH



CARE PLANNING

THE EVER PRESENT and increasing demands by consumers, providers and regulators for "quality" in health care delivery, has forced the various disciplines to face the fact that no one group acting alone (multidisciplinary) can provide all the care that the consumer should receive. Instead, the various disciplines must function, one in unison with the other (interdisciplinary), to achieve comprehensive care.

Regardless of your affiliated discipline in the health care delivery system (physician, dietician, nurse, social worker, rehab therapist) or your era of education, the name by which this interdisciplinary approach to comprehensive care is referred to is "care planning."

Care planning, from any spectrum in the health care delivery system, has as its foundation "problem-solving." Problem solving consists of 4 on-going phases.

1. ***Assessment* of the problem.**
2. ***Planning* how to remedy the problem.**
3. ***Implementing* the plan(s).**
4. ***Evaluation* of the intervention.**

Care plans are generally based on the physicians' medical regime which is based on the medical diagnosis. The medical regime is the medication, treatment, diet, or therapy ordered to treat the diagnosis. All other disciplines involved in the delivery system utilize this information as the basis from which to build a plan of care.

Assessment is an ongoing process of collecting, validating, analyzing and interpreting information about the consumer (patient) in order to identify problems. The end result of assessment is the formulation of a diagnosis or identification of a problem.

Once an assessment has been made and, the problems (diagnosis) identified, *planning* or determining a course of action follows. This course of action depends on the goals to be achieved. The goals may be curative, preventive, or maintenance oriented. In order for "planning" to be effective the actions to be taken must also be considered. The relevancy of the action to be employed is based on the expected outcome, and this "relevancy" is given consideration (regardless of your discipline) in light of what the other disciplines are doing.

Implementing the actions considered relevant to achieving the expected outcome is the next step. Effective implementation is based on continuity between the efforts of all disciplines. If one discipline does not work in unison with the others (interdisciplinary), continuity of care is at risk. One means by which continuity is enhanced is through a documented plan (overall plan of care) utilized by all disciplines.

Evaluation is the process of determining whether the expected outcomes have been achieved, thus it presupposes the previous assessment with regard to identifying the problem, setting a goal, and determining appropriate action.

Regardless of the terminology, regardless of your discipline, (physician, nurse, dietician, social worker, rehab therapist), and regardless of the realm in which you apply it (critical care and minute-by-minute problem solving or long-term care and month-by-month problem solving), care planning will always exist.

The approach from which you pursue care planning will vary based on your indoctrination, your current field of employment, and the current regulatory standards governing it. Regardless, the ultimate pursuit, is that of "quality" in health care delivery.

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

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40 mg
Sustained Action "Swallow" Tablets

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See following page for brief summary of prescribing information.

SORBITRATE®
(ISOSORBIDE DINITRATE)

Please consult full prescribing information before use. A summary follows:

INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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June 1985 Morbidity Report

Disease	June 1985 Total	1985 to Date	1984 to Date	Most June Cases Reported From These Counties
Amebiosis	2	28	39	Hancock, Johnson
Brucellosis	1	1	1	Toma
Chickenpox	174	5318	6379	Scattered
Compylobacter	40	110	113	Scattered
Cytomegalavirus	0	3	9	
Eotan's Agent infection	0	6	21	
Encepholitis, viral	1	11	7	Clinton
Erythemo infectiosum	0	0	51	
Gostroenteritis (GIV)	254	10055	8744	Scattered
Giardiasis	46	174	91	Scattered
Hepatitis, A	4	24	20	Benton, Scott
Hepotitis, B	10	50	51	Scottered
Hepatitis, Non A-B	2	10	11	Lee, Polk
Hepatitis type unspecified	1	5	8	Woodbury
Herpes Simplex	106	554	468	Scottered
Herpes Zoster	0	0	2	
Histoplosmosis	5	11	15	Dubuque, Warren
Infectious mononucleosis	8	103	100	Dubuque, Linn, Pottawattomie
Influenzo, lab confirmed	0	169	170	
Influenzo-like illness (URI)	332	24937	30743	Scottered
Legionellosis	0	3	1	
Moloria	0	1	1	
Meningitis				
aseptic	0	11	14	
bocteriol	17	78	63	Scottered
meningococcal	0	7	18	
Mumps	1	8	17	Cedor
Pertussis	0	3	3	
Robies in onimols	6	87	78	Scattered
Reye Syndrome	0	4	2	
Rheumatic Fever	0	0	0	
Rubello (Germon measles)	1	1	0	Polk
Meosles	0	0	0	
Solmanellosis	28	111	111	Scottered
Shigellosis	1	9	21	Polk
Toxic Shock Syndrome	0	5	9	
Tuberculosis				
totol ill	5	38	34	Scottered
bact. pos.	5	37	28	Scottered
Typhaid Fever	0	0	0	
Venereol diseoses:				
Gonorrheo	356	2111	2116	Scattered
Syphilis	0	14	10	

Other Non-Repartable Diseases: Ascoris — 1, Hancock; Chlomydio — 1, Jahnsan; 1, Cedor; 2, Scott; Clonorchis — 1, Jahnson; Hookworm — 3, Winnishiek; Ureoplasmo Ureolyticum — 1, Jahnson; 1, Kossuth.

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OUR MAN IN EDUCATION

(Continued from page 363)

annual title *Contempo* offered synopses of major advances in medical disciplines for the previous year. If you turned to the table of contents and counted the number of enumerated disciplines, you would find 37. No one individual, I think, could have much mastery over that many disciplines, even though I think it is possible that many physicians, in fact, could truly be interested in all 37 — medicine is simply that fascinating. But how many interests and how much talent would it take to put you or anyone into the genius category?

And then one wonders about diversity: for example, if one is interested in both neurosurgery and proctology, ought those fields be counted as diverse as Leonardo's interest in painting and hydraulic engineering? If you can make a clearly reasoned, persuasive response to that question, maybe you deserve the title of genius yourself.

RECENT BOOKS

Parke, Ross D., editor, 1984, *Review of Child Development Research,* Volume 7, THE FAMILY, University of Chicago Press, Chicago, Illinois, $30. Emphasizes that a child's development is best understood through study of the family as a whole.

Stevenson, Harold W., and Siegel, Alberta E., editors, 1984, *Child Development Research and Social Policy,* University of Chicago Press, $15 Paperback; $30 Cloth Cover. This volume is first in a series from the Society for Research in Child Development. It highlights the evolution of social policies toward various ethnic, racial and language groups. It describes various factors affecting children, e.g., divorce, nutrition, public policy, etc.

Bennett, Cleaves M., 1984, *Control Your High Blood Pressure Without Drugs,* Doubleday & Co., Inc., New York, New York, $15.95. A 12-week program, written for lay persons primarily, which attacks the causes of hypertension with diet modification, stress reduction, and simple regular exercise.

Arney, William Ray, and Bergen, Bernard J., 1984, *Medicine and the Management of Living: Taming the Last Great Beast,* University of Chicago Press, Chicago, Illinois, $19.95. A sociologic approach to a radical assessment of medical power and the medical establishment.

Hilgard, Josephine R., and LeBaron, Samuel, 1984, *Hypnotherapy of Pain in Children with Cancer,* William Kaufmann, Inc., Los Altos, California, $18.95. A supportive and often overlooked approach to alleviation of fear, tension, and pain in children who because of the nature of their illness suffer so very much.

Blau, Sheldon Paul, and Schultz, Dodi, 1984, *Lupus, the Body Against Itself,* revised edition, Doubleday and Company, Inc., Garden City, N.Y., $12.95. The senior author is the Director of the Division of Rheumatic Diseases at Nassau County Medical Center (New York). Ms. Schultz adds the gift of the science writer presenting the subject in a clear manner to the lay public.

Medical Developments

NEWS/PRODUCTS, PROGRAMS, ETC.

DIET & CANCER — The American Council on Science and Health (ACSH) has an excellent report on *Diet and Cancer*. To obtain a complimentary copy, and information about ordering multiple copies, send a self-addressed, stamped (39¢) business-size (#10) envelope to Diet and Cancer, ACSH, 47 Maple Street, Summitt, New Jersey 07901.

ADULT IMMUNIZATION — An excellent *Guide for Adult Immunization*, 1985, first edition, is available from the American College of Physicians. This guide resembles the well known "Red Book" of the American Academy of Pediatrics. This guide will aid internists and family practitioners in maintaining the immunization status of adult patients. The 132-page book is available from The American College of Physicians, Division of Scientific Activities, Health and Public Policy, 4200 Pine Street, Philadelphia, Pennsylvania 19104. The prices: 1-5 copies, $10 each; 6-20 copies, $8 each; 21 or more copies, $6.50 each.

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REDUCING CHOLESTEROL — Data from researchers at the University of Guelph in Ontario, Canada, report that an isolated soy protein (ISP)-based beverage used to replace milk in the normal diet tends to reduce cholesterol in people with serum cholesterol levels above the normal range. ISP is what is left when the husk, oil, and carbohydrate of the soybean has been removed. It contains virtually no fat, cholesterol or calories.

UNIQUE CATHETER — UroTec Systems Corporation, of Pittsburgh, has introduced a unique urinary catheter which offers a number of advantages over the widely used latex and teflon-coated catheters. The nature of the polyvinylchloride permits thinner walls to give greater drainage capacity with less outside caliber. For example, a 16-French UroTec/Franklin catheter has greater drainage capacity than a 24-French latex catheter. The UroTec/Franklin catheter is thermo sensitive, i.e., it is more stiff at room temperature to facilitate insertion, yet softens rapidly without collapsing after insertion into the patient. For further information, contact UroTec Systems Corp., 1000 California Avenue, Pittsburgh, Pennsylvania 15212, or call (collect) 1-412/231-3300.

NITRATE & NITRITE — The public policy considerations for nitrate and nitrite revolve around the risk or potential risk they present to the United States population. These risks may be defined in terms of formation of carcinogenic nitrosamines. These statements are from a report "A Policy Perspective on Safety: Nitrite

(Please turn to page 375)

Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

* **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

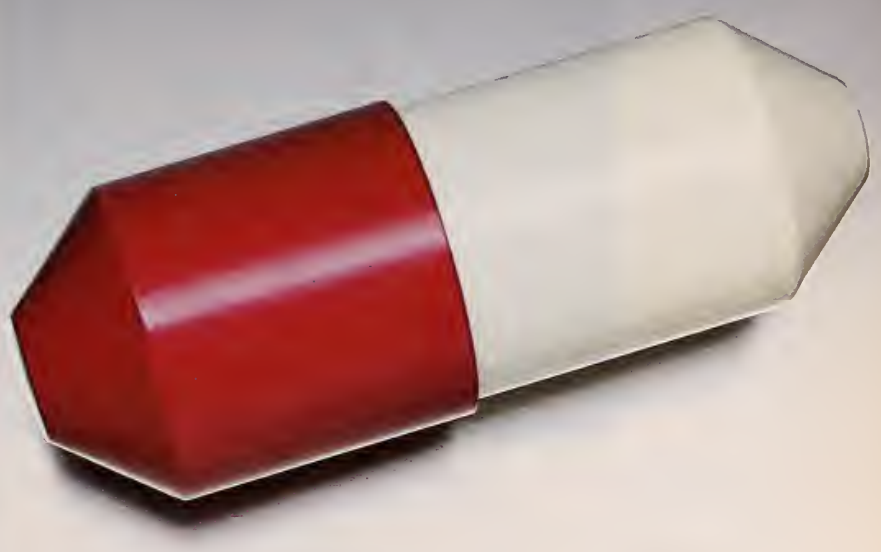
Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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and Nitrate" by Steven R. Tannenbaum, Ph.D., Massachusetts Institute of Technology. This is the first Public Issue Report in a new series made possible by a grant from Hoffman-La Roche Inc. It is available from Health Issues, P.O. Box 1115, Radio City Station, New York, New York 10019.

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100TH ANNIVERSARY — Norwich Eaton Pharmaceuticals, Inc., makers of such professional products as Furacin®, Furadantin®, Vivonex®, Dantrium®, Topicycline®, Chloraseptic® and others celebrates its 100th anniversary this year. A brief centennial historical leaflet about Norwich Eaton may be obtained by writing to Public Affairs, Norwich Eaton Pharmaceuticals, Inc., 17 Eaton Avenue, Norwich, New York 13815.

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EYE DOCTORS ARE NOT CREATED EQUAL — The Iowa Academy of Ophthalmology has developed a new public information campaign to explain the differences between optometrists and ophthalmologists. Print and television presentations have been distributed throughout Iowa with the theme that "eye doctors are not created equal."

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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. and Mrs. Thomas E. Jessen, Newton, served as marshals of the 1985 Newton Cardinal Relays. The honor was in recognition of their continuing contribution to the community in general and the school district in particular. . . . **Dr. Daniel Hudec,** Fort Madison, has been named a diplomate of the American College of Surgeons. . . . **Dr. Ronald R. Reschly** joined the Grinnell General Hospital staff in July. Dr. Reschly received the M.D. degree at Case Western Reserve University School of Medicine; and served an orthopedic surgery residency at the University of Michigan. . . . **Dr. David Thaler,** Cedar Rapids, has retired from active practice. Dr. Thaler received his medical education at the University of Paris Medical School in France. He located in Cedar Rapids in 1946. . . . **Dr. Robert A. Sedlacek,** Cedar Rapids, has received the Iowa Internist of the Year Award. The award is sponsored by the Iowa Clinical Society of Internal Medicine. It was presented to Dr. Sedlacek at a meeting of the Linn County Medical Society. . . . **Dr. John H. Sunderbruch,** Davenport, was featured in a recent article in the QUAD-CITY TIMES. The article saluted Dr. Sunderbruch upon completion of his 50th year in medicine. . . . **Dr. Douglas Stangl** has joined the staff of the Estherville

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Medical Clinic. Dr. Stangl received the M.D. degree at the University of Minnesota Medical School and served his family practice residency in Sioux City.

Dr. Patrick Kessler, orthopedic surgeon, has joined **Dr. William Catalona** at Riverside Orthopaedics and Sports Medicine in Muscatine. Dr. Kessler received the M.D. degree at Ohio State University College of Medicine. Prior to locating in Muscatine, Dr. Kessler practiced in Winona, Minnesota. . . . **Dr. and Mrs. Webster Gelman,** Iowa City, were honored as Distinguished Friends of the U. of I. at the annual all-alumni reunion. The Gelmans have been active supporters of the U. of I. Museum of Art. Mrs. Gelman was chair of the Friends of the Museum; served on the Museum Advisory Board, and is a member of the Friends Development Council. A retired orthopaedic surgeon, Dr. Gelman was co-chair of the national campaign committee for Iowa Hall, a major addition to the U. of I. Museum of Natural History and is a lifetime board member of the U. of I. Foundation. . . . **Dr. Peter T. Silberstein** has joined the staff at the Park Clinic in Mason City. Dr. Silberstein received the M.D. degree at State University of New York at Buffalo; served his internal medicine residency at U. of I. and a fellowship in hematology/oncology at the University of Minnesota in Minneapolis. . . . **Dr. Francois M. Abboud,** professor and head of internal medicine at the U. of I. has been chosen president-elect of the Central Society for Clinical Research. . . . **Dr. Edward G. Nassif,** Ames, has assumed the presidency of the Iowa Thoracic Society. Other officers include — **Dr. John Fieselmann,** Des Moines, president-elect and **Dr. Robert M. Stewart,** Sioux City, secretary-treasurer.

Dr. William Bean, professor emeritus, Department of Internal Medicine, U. of I. College of Medicine, has received the honorary degree of Doctor of Humane Letters from Jefferson Medical College, Thomas Jefferson University in Philadelphia, Pennsylvania. . . . **Dr. Charles M. Helms,** associate professor of internal medicine, is one of 6 educators in the nation chosen to be Robert Wood Johnson Policy Fellows. Dr. Helms will spend the 1985/86 academic year in Washington, D.C., working with White House advisors, health agency administrators, Congressional staff members and health interest groups.



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Dr. Robert E. Rakel, professor and head of the Department of Family Practice at U. of I. College of Medicine, has been named chairman of the Department of Family Medicine at Baylor College in Houston, Texas. Dr. Rakel also will serve as associate dean for academic and clinical affairs at Baylor and as chief of the Family Medicine Service at St. Luke's Episcopal Hospital in Houston. He came to the U. of I. in 1971. . . . **Dr. Joni Hales** has joined **Dr. Steven Palmer** in family practice in West Liberty. Dr. Hales received the M.D. degree at U. of I. College of Medicine and served her family practice residency in Cedar Rapids. . . . **Dr. A. J. Havlik,** Tama, has been chosen the 1985 recipient of the Tama Fire Department Community Service Award. Dr. Havlik was presented a plaque noting the honor. **Dr. Alfred J. Herlitzka,** Mason City, has been named president of the Iowa Academy of Surgery.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Iowa Hospitals Respond To Changing Times

THE LATEST STATISTICS seem to indicate that, like double digit inflation, we are not apt to see double digit increases in hospital patient costs in the time just ahead.

A comparison of new data with that of several years ago demonstrates that Iowa hospitals are responding to the call for cost containment. Between 1981 and 1982, for example, expenses per admitted patient jumped 16.3%, followed by an increase of 15.7% between 1982 and 1983. However, in the period between 1983 and 1984 the costs per admitted patient increased only 6.2%. This trend is continuing into 1985, where quarterly data recently released by the Iowa Hospital Association show a 6.6% rise in those same costs and a less than 1 percent increase in total Iowa community hospital expenses.

"Such a small increase in total hospital expenses, coupled with the minimal rise in expenses per patient admissions for the first quarter and all of last year indicate that Iowa is succeeding with the challenge of controlling hospital costs," says Donald Dunn, president of the Iowa Hospital Association.

A booklet published recently by the IHA entitled *Iowa Hospitals: A Profile of Service to the People* contains data about Iowa hospitals and the environment in which they operate. Statistics, charts and graphs in the guide support the contention that Iowa hospitals are responding to the changing times and the new regulatory directives.

"The dramatic reductions in hospital use and expenses and the response by Iowa hospitals by closing beds and shifting resources to other needed health care services have all contributed to the controlling of patient costs," Dunn adds.

Supporting Dunn's statement are 1983-84 hospital use statistics which show Iowa leading both the region and the nation with an 11.2% decline in total hospital admissions. The first quarter of 1985 saw a continued drop in hospital use of 8.4%. After dropping 15.2% in 1983-84, total patient days spent in Iowa hospitals declined another 9.6% during the first quarter of this year.

Dunn notes that data sources other than the IHA verify the trend of cost moderation and stabilization in hospitals.

"Reduced hospital utilization means that Blue Cross is reducing its premiums. And data from the State Department of Human Services shows that Iowa Medicaid payments to hospitals were $11 million below budget for the first 6 months of this year," he relates.

Following is other interesting and recent data collected by the IHA from 109 of Iowa's 129 community hospitals:

- **As of March, 1985, the number of full-time equivalent hospital personnel had declined 6.5% to 33,782.**
- **Total patient admissions for the first quarter of 1985 were 97,719, compared to 106,713 for the first quarter of 1984.**
- **Expenses per inpatient day rose from $398 during the first 3 months of 1984 to $430 during the first 3 months of this year.**
- **30,017 outpatient surgeries were performed in January, February and March of this year, compared to 24,908 during the same period last year.**
- **Hospital expenses for the first quarter of 1985 were $328,654,935. Total gross patient revenue was $380,383,100.**

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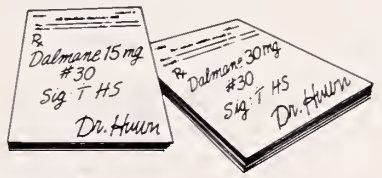
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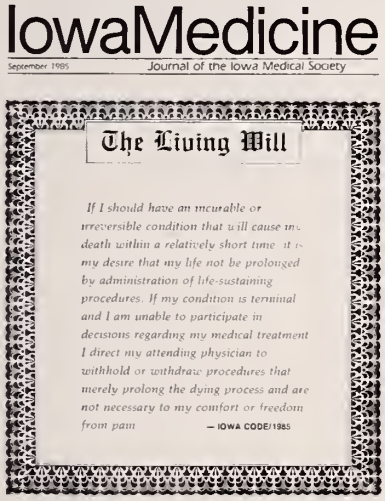
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ABOUT THE COVER



ABOUT THE COVER — Shown on this month's cover is language suggested in the Iowa Code for use by the citizen who wishes to have a say in the nature of the care he or she receives in the event a terminal condition makes it impossible for said person to participate in treatment decisions. A discussion on the new Iowa Life-Sustaining Procedures Act appears on page 391.

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Adjunct Assoc. Professor of Pharmacology
Chicago Medical School
Chicago, Illinois

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Director of Respiratory Services
Danbury Hospital
Danbury, Connecticut

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Clinical Professor of Medicine
College of Osteopathic Medicine
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PRESIDENT'S PRIVILEGE



THE NEXT CHAPTER in Iowa's medical liability history will be written this month. On September 12 the Iowa Medical Society Executive Council will receive a report from the IMS Task Force on Medical Liability. If accepted, this report will set the path down which the Iowa medical profession will move in its bid to ameliorate the liability dilemma.

Our IMS Task Force on Medical Liability was mandated by the 1985 House of Delegates. It includes 12 physicians. The recommendations of the Task Force were compiled at a lengthy meeting August 7. As this is written, the Task Force has a further meeting August 28 to evaluate its ideas once again and presumably approve them for presentation to the Executive Council. You are reminded the Executive Council is the Society's policymaking body between sessions of the House of Delegates.

The Task Force recommendations aim at two objectives: (1) to provide mechanisms, some with statutory undergirding, to further assure quality in the care delivered by Iowa medical practitioners, and (2) to enact measures to bring greater equity and efficiency into the Iowa tort system while guaranteeing fair compensation to injured parties and yet promoting economic realism.

This anticipated action by the Executive Council will set the course for the balance of my presidency. I remain fully committed to the pursuit of whatever blueprint emerges. Assuming an okay is given by the Executive Council, we must move expeditiously to get the extensive supportive information into a form that will be clearly understood by the public and by its elected and governing representatives.

We will need the enthusiastic and broad participation by Iowa physicians if any quest for change is to succeed. The gravity of our current circumstances — and the threat posed to the availability of care — make it mandatory that we all work with commitment and diligence.

Emmett B. Mathiasen M.D.

Emmett B. Mathiasen, M.D.
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Life-Sustaining Procedures Act Gives Iowa The 'Living Will'

KEITH LUCHTEL, J.D.
Des Moines, Iowa

Iowans now have a legal mechanism available to direct those who care for them in the event of a terminal illness. As major participants in the implementation of Iowa's "living will" law, physicians need to understand its provisions. This article describes the principal aspects.

DURING THE 1985 session of the Iowa General Assembly, the "living will" bill was passed and subsequently signed by the Governor. The bill was supported by the Iowa Medical Society.

Iowa thus joins 34 other states and the District of Columbia which have passed legislation dealing with the rights of citizens to provide instructions concerning their treatment during a terminal illness.

The first such legislation was passed in California in 1976. Legislators have responded countrywide to the concerns of various groups over the rights of patient self determination in matters relating to treatment during the dying process, rights recognized in Iowa case law and in medical ethics. The advance of medical technology was perceived as proceeding at a rate in excess of the ability of the law and medical ethics to cope. Horror stories proliferated of patients being maintained by machine beyond any reasonable expectation of effective beneficial treatment. Families, physicians and their attorneys increasingly confronted ethical, legal and moral questions for which readily acceptable answers did not exist. These perceptions shaped the demand for legislative action to allow patients to state their desires in advance of illness and to provide for immunity to physicians acting in accordance with those desires.

In 1984 the Iowa Medical Society spearheaded an effort to draft "living will" legislation to address these concerns. The objective was to provide citizens the opportunity to execute a "living will" requesting that the dying process be allowed to proceed to its natural conclusion without undue prolongation. A further objective was to ensure that a resulting death was no different from any other death from a legal, ethical and moral standpoint. Several groups were consulted for their input and the Iowa State Bar Association gave valuable assistance in reaching a consensus final draft.

Life-sustaining Procedures Act

The Life-sustaining Procedures Act is the official title of the new Iowa Code Chapter. It attempts to codify a common sense approach to these issues. This kind of legislation has been welcomed by the courts as indicated by supportive decisions in other states and in public statements by members of the Iowa judiciary.

Because the law in this area is new and un-

Mr. Luchtel is an attorney in Des Moines, Iowa, and serves as legislative counsel to the Iowa Medical Society.

settled, a cautious and common sense approach to its application is warranted. The law covers 8 pages and is divided into 11 sections and many subsections. The following discussion is meant as an overview. The statute itself should be consulted to resolve specific questions and problems encountered in practice. The safest course is to always seek legal advice concerning specific questions or unusual circumstances. Copies of the statute may be obtained from Iowa Medical Society headquarters.

The first section of the bill recognizes the right of patients to make decisions concerning their health care subject to certain societal interests in protecting life and maintaining medical ethical standards. This section also acknowledges the fact that technology now permits the maintenance of "life" beyond any meaningful existence. One of the stated purposes of the legislation is to encourage communication between terminally ill patients and their families and physicians as well as provide a means for recognition of the patients' wishes after they are no longer able to communicate them.

Three Important Definitions

The Act contains several definitions, 3 of which are critical:

1. "Life-sustaining procedure" means any medical procedure, treatment or intervention which *both* utilizes mechanical or artificial means to sustain, restore, or supplant a spontaneous vital function *and*, when applied to a patient in a terminal condition, would only serve to prolong the dying process. The Act specifically provides that this definition *does not include* the provision of sustenance or the administration of medication or performance of any medical procedure necessary to provide comfort care or alleviate pain.

2. "Terminal condition" means "an incurable or irreversible condition that, without the administration of life-sustaining procedures, will, in the opinion of the attending physician, result in death within a relatively short time." The imprecision of this definition is an indication of the obvious difficulty in defining, let alone determining, with any degree of certainty when a patient is beyond the point of benefitting from further treatment with the onset of death being at hand, absent life-sustaining procedures. The phrase "result in death within a relatively short time" was selected over the language of several other state statutes which provide that the patient's death must be "imminent."

The Commissioners on Uniform State Laws is an organization that has developed several uniform state laws such as the Uniform Commercial Code which has been adopted in all states. It is proposing to use the language of the Iowa Act in its uniform act because "imminent" is thought to carry too heavy a sense of immediacy. The Commissioners recognize the imprecise nature of the definition selected and their interpretive notes, often relied upon by courts in interpreting other uniform acts, will be asserting a need for liberal construction by the courts. It is anticipated that several other states will also use this language. Thus several state courts could potentially consider what constitutes "death within a relatively short period of time." Until further definition occurs, physicians, their advisors and relatives of terminal patients will be required to apply their own best judgment.

3. "Qualified patient" means a patient who has a "living will" and who has been determined by his or her attending physician to be in a "terminal condition."

Competent Persons Over 18

Any competent person 18 or older may execute a "living will" at any time. An incompetent person cannot execute such an instrument; however, the Act provides that a physician "may presume, in the absence of actual notice to the contrary" that a "living will" complies with the Act and is valid. Only in rare cases should the question of competency at the time of execution be an issue. A "living will" is operative only when the person's condition is determined to be terminal *and* the person is unable to make treatment decisions. It is the patient's responsibility to provide the "living will" to the attending physician.

A "living will" must be signed by the declarant or by someone else at the declarant's direction in the presence of 2 witnesses who shall also sign the document. The Act suggests, but does not require, the following language:

"If I should have an incurable or irreversible condition that will cause my death within a relatively short time, it is my desire that my life not be prolonged by administration of life-sustaining proce-

dures. If my condition is terminal and I am unable to participate in decisions regarding my medical treatment, I direct my attending physician to withhold or withdraw procedures that merely prolong the dying process and are not necessary to my comfort or freedom from pain."

A "living will" may be revoked at any time and in any manner whatsoever *without regard to the patient's mental or physical condition.* A revocation is only effective as to the attending physician when communicated to him or her by the patient or another. *Upon notice of a revocation, the attending physician must make that revocation a part of the medical record.*

Physician involvement with the law begins with diagnosis of a terminal condition. *When a person who has executed a "living will" is found by the attending physician to be in a terminal condition, this finding must be confirmed by another physician and the attending physician must then record that finding in the patient's medical record. This must be done before placing any reliance on the existence of a "living will."*

The Act specifically states that a "qualified patient" has the *right* to make decisions regarding the use of life-sustaining procedures as long as he or she is able to do so.

Conditions Relative to Pregnancy

Consideration of the terminal patient with a "living will" who is also pregnant was of particular concern in the drafting of the Act. Because a "living will" could become "operative" several years after its execution, there are obviously many combinations of situations involving pregnancy that could not be specifically dealt with by statute. The Act provides that the "living will" of a pregnant terminal patient "shall not be in effect as long as the fetus could develop to the point of live birth with continued application of life-sustaining procedures." Once again imprecise language is used calling for judgment by the physician. Existing case law and ethical principles will still apply in these situations.

The Iowa Life-sustaining Procedures Act also covers the patient in a terminal condition who *has not* executed a "living will" and is "comatose, incompetent, or otherwise physically or mentally incapable of communication." Life sustaining procedures may be withheld or withdrawn from such a patient if there is consultation (a witness is required to be present at this consultation) *and* a written agreement so providing with a proxy who was guided by the express or implied intentions of the patient. An order of precedence among classes of proxies is established in the Act. The first priority is to a person given a power of attorney by the patient to make treatment decisions. The ensuing order of proxies is court appointed guardian, spouse, adult children, parents and adult sibling.

The Act does not apply to patients without a "living will" who are pregnant as long as the fetus could develop to the point of live birth with continued application of life-sustaining procedures.

Legislation proposed by the Iowa Medical Society did not require verification of the diagnosis of terminal condition by a second physician. That provision was added by amendment on the Senate floor to a section that relates only to patients with a "living will." Thus it appears that for those without a "living will," this verification is not a statutory requirement.

The Act provides that when a physician or institution is unwilling to comply with the requirements of the Act, the physician or institution must take reasonable steps to effect transfer of the patient to another physician or institution.

Immunities for Physicians

There are immunities provided for physicians, institutions and others who act "in accordance with the requirements" of the Act so long as those actors have no actual notice of a revocation of a "living will." "A physician who causes the withholding or withdrawal of life-sustaining procedures from a qualified patient" is granted immunity. The Act also states: "A physician is not subject to civil or criminal liability for actions under this chapter which are in accord with reasonable medical standards." Both grants of immunity would apply in cases where there is a "living will," and the second grant would apply in cases where there is not such a document.

The Iowa Statute differs in several respects from other state statutes on this subject. For instance, there are no specific penalty provisions relating to physician conduct or unwillingness to abide by the terms of a "living will."

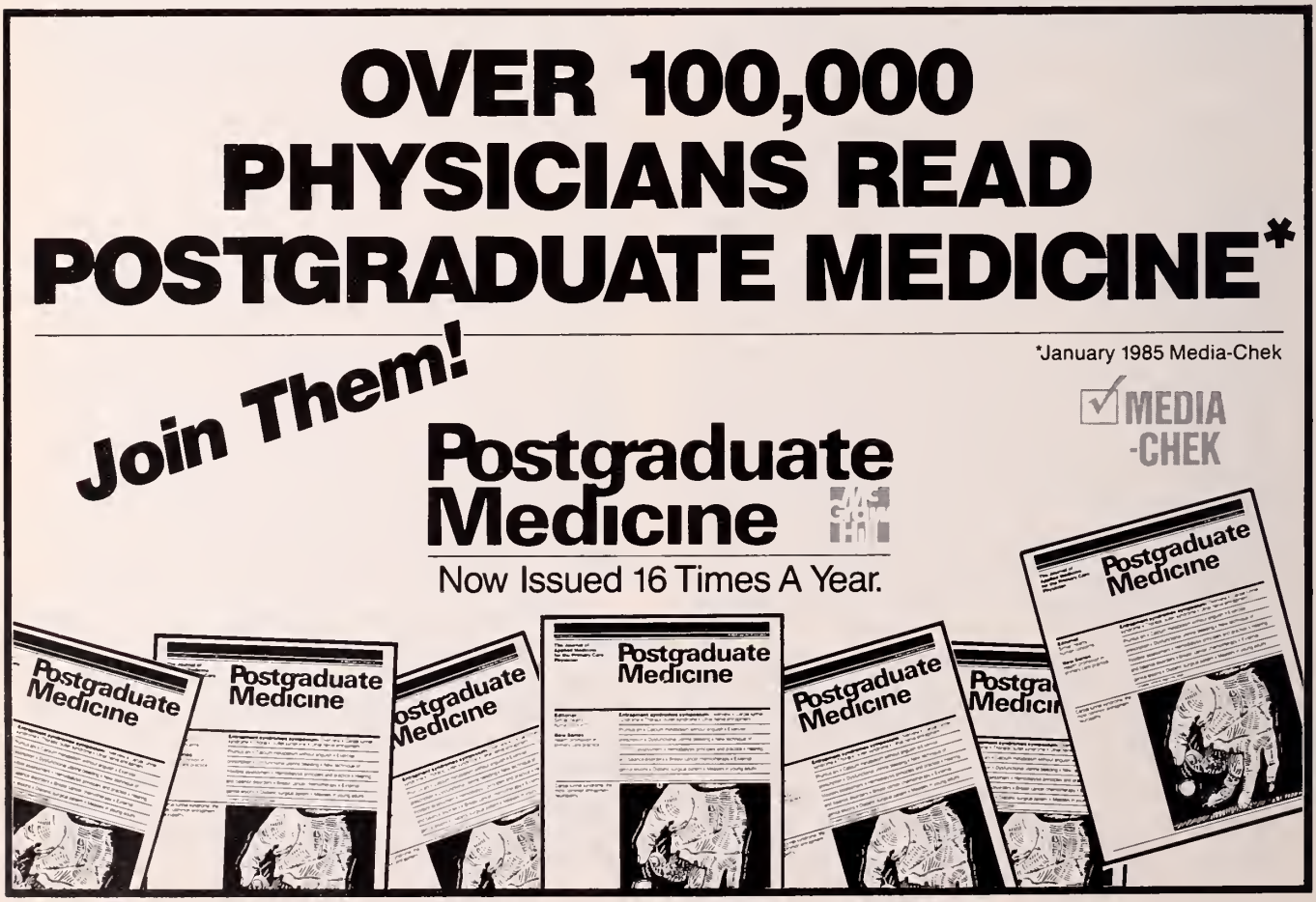
(Please turn to page 394)

Furthermore, there is no clause purporting to legislatively determine medical ethics. The Iowa law also eliminates any record keeping burden on physicians until after it is determined that the patient is in a terminal condition.

There are several statements in the last section of the Act relating to the central premise; that is, a death occurring pursuant to a "living will's" direction should not differ morally, ethically or legally from a death occurring absent such a document or statute. No presumption is created when a patient is found not to have a "living will." It is the clearly stated legislative intent that the Act not replace any existing case law in the area of patient's rights to choose treatment or physicians' rights and responsibilities. The final subsection of the Act states: "This chapter shall not be construed to condone, authorize or approve mercy killing or euthanasia, or to permit any affirmative or deliberate act or omission to end life other than to permit the natural process of dying."

Is the Life-sustaining Procedures Act *the answer* to the complex problems it addresses? No. As with any "new" area of law and ethics, evolution can be expected. The Act obviously fails to address the "new frontier" in this area of legislation, that of nutrition and hydration.

Hopefully, the Act offers a good beginning upon which to build. Hopefully, it will provide a framework for decision making by physicians, patients and loved ones regarding the treatment of the terminally ill. Hopefully, it will foster discussions between family members concerning treatment desires before terminal illness strikes, thus easing the burden for survivors when those decisions have to be made. It is a law that will need to be applied by the legal and medical professions with understanding and common sense directed toward aiding the dying patient. Hospital medical staffs should become familiar with this new law and plan for its implementation. Legal advice should be sought whenever questions of interpretation or application arise.



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R. Melvin Henderson, Ph.D.

QUESTIONS AND ANSWERS



NEW HPCI CHAIRMAN

R. Melvin Henderson, Ph.D., is the new chairman of the board of directors of the Health Policy Corporation of Iowa. He has been HPCI vice-chairman from 1982-85; in 1981, he chaired the Governor's Commission on Health Care Costs. Dr. Henderson is vice president and dean of academic affairs at Simpson College in Indianola.

How and why was the Health Policy Corporation of Iowa founded?

The HPCI was founded in 1982 to carry out the principles and recommendations of the Governor's Commission on Health Care Costs. Its purpose is to facilitate informed discussions and actions toward continuing quality health care and cost management and to provide research and data concerning policies related to health care delivery in Iowa.

How would you assess the current health care environment in Iowa as it relates to the HPCI?

There is a continuing strong concern over providing quality health care at contained costs, and the HPCI continues to champion a high level of quality. We believe Iowa has a fine health care system that can be sustained and improved while containing costs.

Many health care providers are concerned that the quality of Iowa's medical care may suffer because of the increased focus on cutting costs. Could you comment on this issue?

There are studies showing there is a correlation between high quality, efficient health care delivery and lower costs. Both the Mayo Clinic and the Cleveland Clinic are examples of providers who deliver high quality at lower costs. Also, many Iowa physicians have been providing very high quality care at lower costs and have always been interested in this issue.

Could you describe the HPCI's major concern at this time?

Generally, it is how to provide health care services to areas of serious need during the current economic times. Specifically, we are very concerned over caring for the elderly in Iowa. We have virtually no data for the population group over 65, and we are pushing to begin collecting data on long term care. Getting the right kind of information and determining the appropriate uses for it are serious issues.

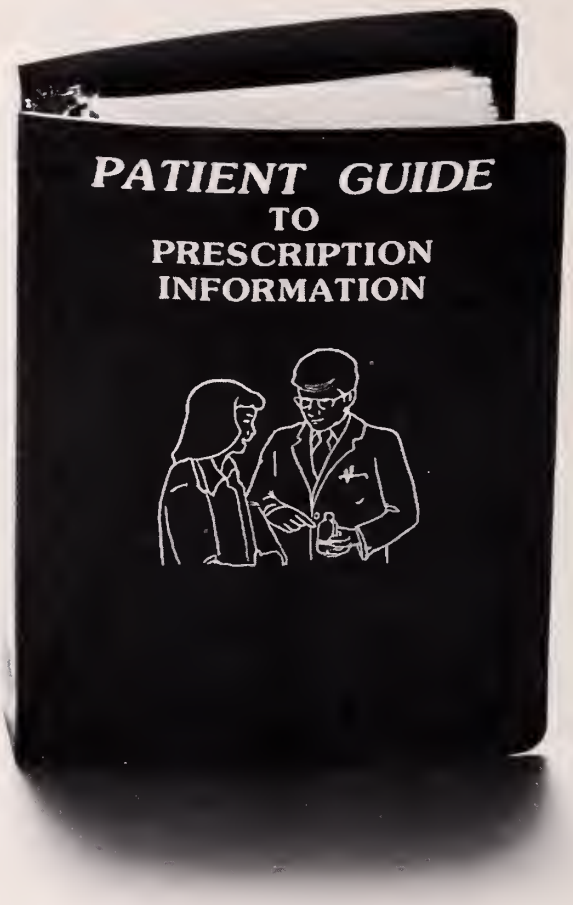
Iowa's medically-needy people — those who are unemployed or temporarily needy for other reasons — are also a serious problem. There are a lot of people in Iowa right now who don't have insurance or proper care. The HPCI is trying to facilitate solutions in this area; this means, of course, we face the situation where people who are able to pay insurance premiums and taxes are going to have to pay for those who can't.

Another area of concern is medical technology. The HPCI supports advance planning in this area because medical technology is very expensive and not everybody needs to have to same things. We need to get over the competitive feelings.

At the present time, there is a growing concern over health care for rural Iowans. What is the HPCI's involvement in this area?

Traditionally, the HPCI has addressed urban settings because that's where the con-

(Please turn to page 404)



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Benign Familial Neonatal Convulsions

C. CRISPEN, D.O. and THOMAS KELLY, M.D.
Des Moines, Iowa

Neonatal seizures are frequently associated with serious neurological disease. However, Benign Familial Neonatal Convulsion (BFNC) offers a more favorable prognosis. No serious long term sequelae have been found in a family suffering these seizures. Eight family members representing five generations were evaluated.

NEONATAL SEIZURES are generally believed to be associated with serious neurological disease. Freeman *et al* reviewed 277 newborns with neonatal seizures from the National Collaborative Perinatal Project to discover a mortality of 34.8%. Of the survivors, 30% had cerebral palsy, mental retardation, epilepsy, or a combination of these sequelae.[1] These conditions stem from perinatal asphyxia, infection, malformations and metabolic abnormalities.

It should be stated that some infants with neonatal seizures overcome early problems. One category called Benign Familial Neonatal Convulsion (BFNC)[2-7] often presents a favorable prognosis. BFNC is a dominantly transmitted disorder which presents in the form of multiple, generalized and brief convulsions beginning about the third day of life and stopping within a few weeks.[2-4] A few patients may later develop epilepsy but subsequent growth and development is almost invariably normal otherwise.[2-9] This intriguing condition is described in these summaries involving one extended family.

Dr. Crispen is a pediatric resident at the Raymond Blank Memorial Hospital for Children in Des Moines, Iowa. Dr. Kelly is a pediatric neurologist associated with Blank Hospital.

CASE 1

L.A. was a 3033 gm white female born via spontaneous vaginal delivery to a 21 year old gravida 2, para 2 woman. She was a 40-week gestational age product of an uncomplicated pregnancy and delivery. The APGAR score was 8/8. On day 2 of life the infant was observed by the mother to experience a brief spell consisting of arching of the back, generalized shaking and some difficulty breathing. Later that evening several relatives witnessed a second similar episode. The infant appeared normal after a few minutes. Her pediatrician found no abnormalities on examination.

No seizure activity was noted by the medical staff during the initial hospitalization. The infant left the nursery with no medication but was returned to the hospital at 4 days of age after several more "seizures" occurred. The maternal grandmother reported that the patient's mother had experienced the same kind

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of spells as a newborn. In addition, this same grandmother, a male cousin of the grandmother, and a daughter of this cousin all had convulsions during the newborn period as documented in their hospital records. They received phenobarbital for a few months but were all subsequently seizure free and neurologically normal.

L.A. appeared surprisingly alert and responsive at the time of admission. Her examination was normal. However, 2 seizures were observed within 2 hours after admission. Normal laboratory studies included CBC, urinalysis, blood glucose, calcium, electrolytes, BUN, magnesium, and ammonia. Spinal fluid contained no WBC's; CSF glucose was 61 mg%; protein was 20.4 mg%, and culture was negative. Epileptogenic discharges were suspected on initial EEG and did not disappear on repeat EEG after pyridoxine administration.

"Long term neurodevelopmental evaluations were carried out through 3 generations to verify the generally benign prognosis for BFNC."

Several more seizures were observed, and the patient was treated with phenobarbital. The seizures were noted to consist of generalized tonic-clonic seizures involving eye movements (nystagmus, eye fluttering, eye deviation), apnea and bradycardia with cyanosis. Each episode lasted less than one minute, was witnessed by at least one health professional and was followed by a postictal period. The infant appeared remarkably well between seizures. Seizures ceased, and she was discharged on a maintenance dose of phenobarbital, 5 mg every 8 hours. She remained well at age three months with gradual discontinuation of medication.

CASE 2

D.L.A. (mother of Case 1) was born after a normal gestation and delivery. APGAR score was 8 at 5 minutes. Birth weight was 4139 gm. Initial examination was normal. At age one day she experienced brief generalized tonic-clonic convulsions sometimes associated with cyanosis and postictal lethargy. Interictal neurologic examination remained normal. Lab studies, including CSF, CBC, serum calcium, glucose, and phosphorus, were normal, as were skull x-rays and subdural taps. A total of approximately 20 seizures was noted. Phenobarbital therapy was started, and no seizures occurred after about 1 week of age. Anticonvulsant treatment was stopped at age 6 months. Follow up at age 23 years revealed a normal neurologic exam.

CASE 3

M.L. is the mother of D.L.A. and the grandmother of L.A. and W.M. On day 2 of life her mother noted jerking and twitching movements. By age 4 days she was diagnosed as having convulsions. She received "Luminal" for several months but has been seizure free since a few weeks of age. She has a normal neurologic status at age 46 years.

CASE 4

J.M. is a male half-cousin of M.L. (sharing a common grandmother). He was born in 1939 and experienced several seizures in the newborn period. These ceased after phenobarbital therapy which was discontinued in infancy. At this time he is normal neurologically by our exam.

CASE 5

M.M. (daughter of J.M.) appeared normal at birth. Her APGAR scores were 10/10 and weight 3927 gm. The course was normal until after discharge from the nursery. Convulsions began at age 4 days. The patient was admitted to Blank Hospital where she appeared alert with normal neurologic exam between seizures. Blood glucose, electrolytes, calcium, phosphorus, and bilirubin were normal or non-diagnostic. Examination of CSF and skull x-rays was normal. Several seizures were recorded during her hospital stay despite phenobarbital therapy and 2 IM injections of pyridoxine. However, all seizures stopped and all medications were discontinued at approximately 10 days of age. She remains seizure free and is a good seventh grade student with normal physical exam at this time.

CASE 6

W.M. is a first cousin of L.A. and was born about 6 months after L.A. He was a 3600 gm full term white male born after a pregnancy complicated only by a brief period of fetal

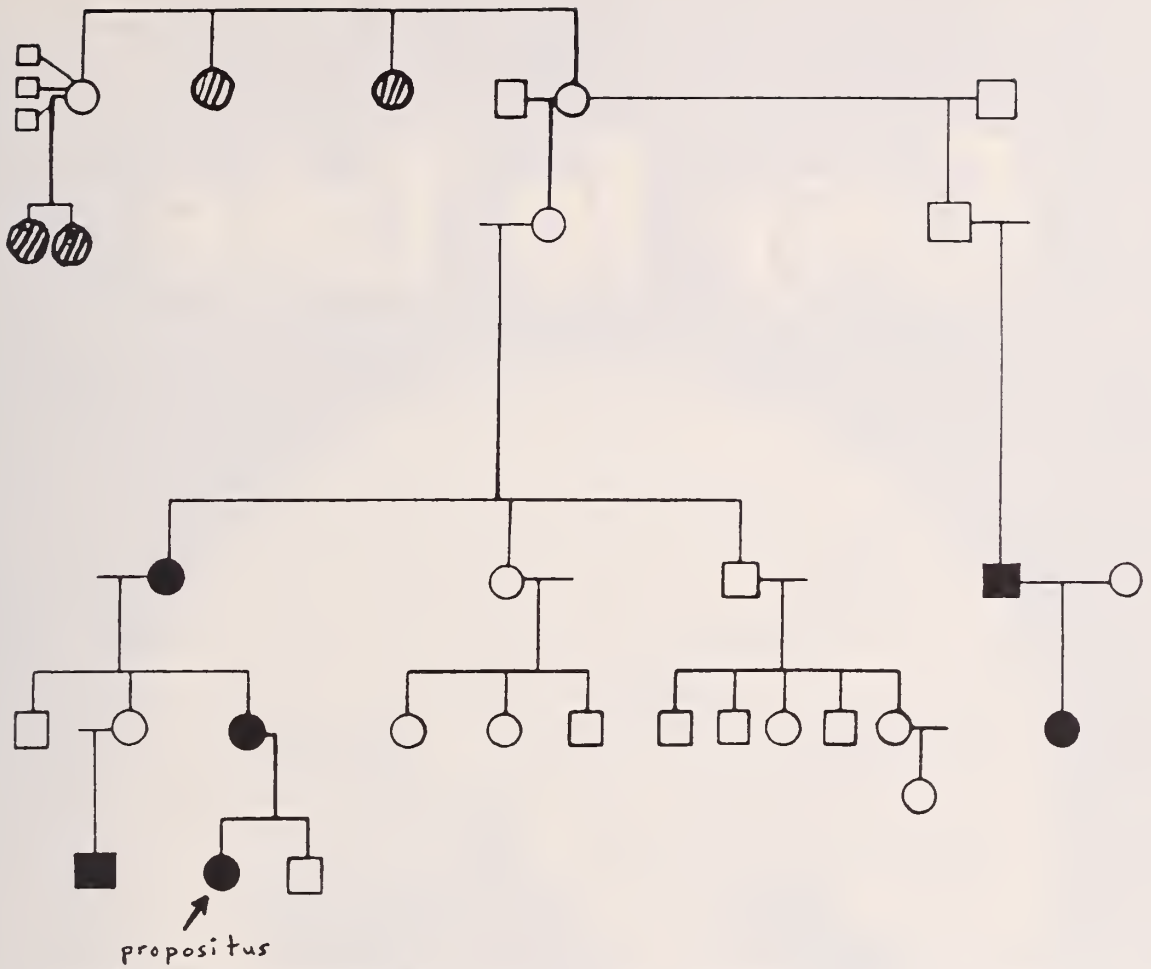


Figure 1. Pedigree of present case. White circle denotes normal female; white square, normal male; black circle, affected female; black square, affected male; and cross-hatched circle, possibly affected, female.

bradycardia one week prior to delivery. The delivery was uncomplicated. His first seizure was at 2 days of age and was witnessed by his physicians. Seizures were brief lasting 30-60 seconds and consisted of staring, arching of the back and cyanosis followed by a postictal period. He was alert and normal otherwise. He was discharged on phenobarbital elixir, 2 ml bid and has been seizure-free since the second day of life. He was judged to be developmentally normal at his one month check-up.

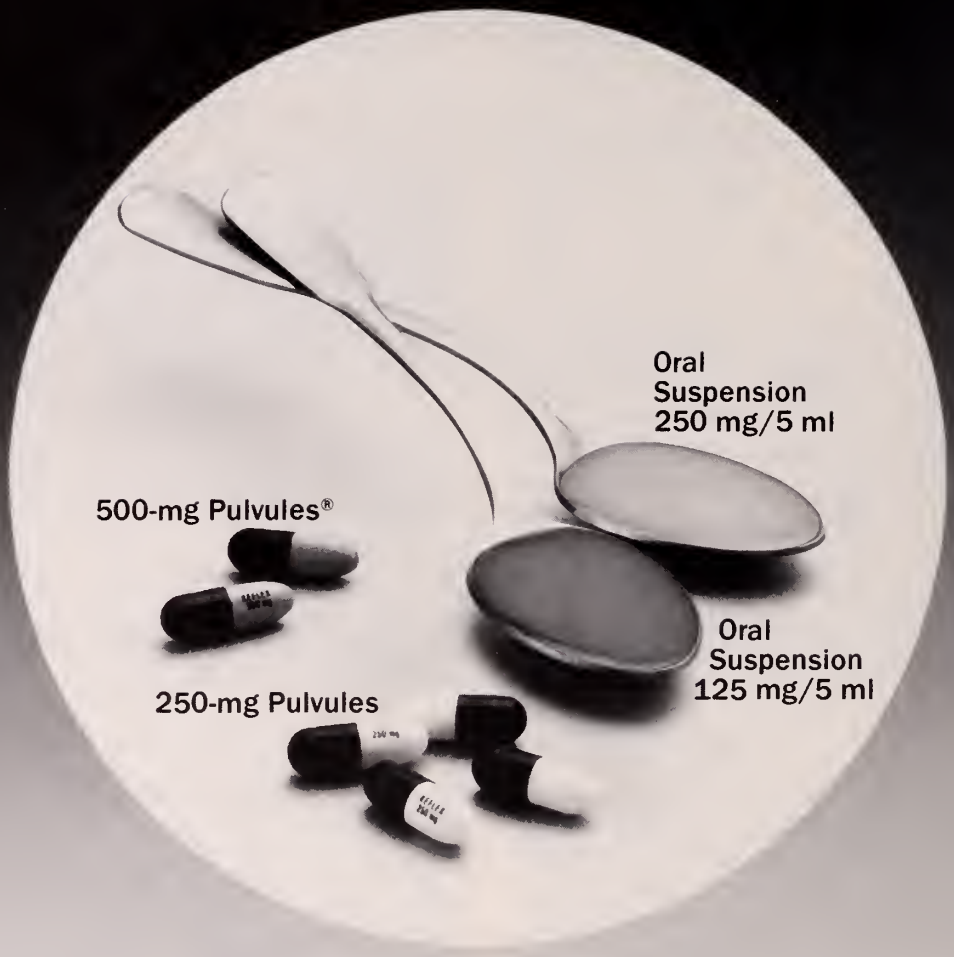
DISCUSSION

Neonatal seizures are a frightening experience for the family and the physician. The prognosis for infants experiencing neonatal seizures is generally grim. Causes include perinatal asphyxia, developmental anomalies, metabolic abnormalities and infection. Nevertheless, there are reports in the literature of what has come to be known as Benign Familial Neonatal Convulsion.[2-9] The first reference to BFNC in the English medical literature was made in 1968 by Bjerre and Corelius.[2] A similar syndrome was reported by Rett and Teubel in 1964.[10] These convulsions are described as multiple but brief. They are usually transmitted via autosomal dominant inheritance and begin around the third day of life.[2-4, 9] Response to anticonvulsants varies but, in general, the convulsions stop after 3 weeks.[4] Members of these families may or may not develop epilepsy later in life, but are otherwise almost invariably normal in their subsequent growth and development.[3-9]

The diagnosis of BFNC is one primarily of

(Please turn to page 401)

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exclusion. BFNC illustrates the importance of family history in evaluating seizures. A history of trauma is absent with this condition. There is a lack of biochemical abnormalities; CT scan is normal. Electroencephalographic changes may be present but are usually transient. Finally, there is usually a remarkable incongruity between the appearance of the patient (alert, active, feeding well) and the history of seizures.

Several members of this family suffered from BFNC. The pattern of transmission seems to conform to an autosomal dominant trait that has variable penetrance. A possible instance of variable penetrance has been noted only one time previously by Zonana, *et al*[9] in Petit and Fenichel's case report.[3] Eight family members spanning 5 generations were involved (see Figure 1). Using hospital records, we were able to confirm involvement of the mother of the propositus and two other family members. The grandmother of the propositus (M.L.) also provided additional history regarding the other affected family members. In addition, we were able to perform complete history and physical exams on 5 involved individuals ranging from 4 days to 46 years of age to document subsequent normal neurologic development. Previously, normal development has been documented for up to 10 years.[6] Also, there have been other neurologic sequelae associated with this problem including learning disabilities and epilepsy.[2, 3, 4, 6, 7] Our verification of normal neurologic development in this family for up to 46 years in this condition is very reassuring. Response to treatment varied. The normal interictal appearance of the propositus and the cessation of seizures within 3 weeks was typical. As in other reported cases, laboratory and radiologic investigations revealed no etiologic basis other than the familial pattern.

SUMMARY

Most neonates who manifest convulsions suffer underlying neurologic or metabolic disease. We present this family to renew awareness of BFNC. Our report is unique in 2 respects: 1) We have a clearly documented case of this condition skipping one generation, justifying the inheritance pattern of autosomal dominant with variable penetrance first suggested by Zonana, *et al;* 2) Long term neurodevelopmental evaluations were carried out through 3 generations to verify the generally benign prognosis for BFNC. Past reports have generally been more dependent upon history to document this aspect of BFNC. The prudent physician will not neglect consideration of other causes of seizures in the newborn, but, if this diagnosis is established, the parents can be given hope for a favorable outcome to a distressing situation.

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COMMENTING EDITORIALLY



ALL WORK AND NO PLAY —

"A little wurruk is not bad, a little wurruk f'r the stomach's sake an' to make ye sleep sound, a kind of nightcap, d'ye mind. But a gr-reat deal iv wurruk, especially in th' summer time, will hurt anny man that indulges in it." — **Mr. Dooley (Finley Peter Dunne).**

"Recreation is not the highest kind of enjoyment, but in its time and place is quite as proper as prayer." — **Samuel Prime.**

HAVE YOU HAD AN ENJOYABLE summer? It is traditional to take summer vacations. The parks are open, travel is not encumbered with ice and snow, and the climate is conducive to swimming and boating. Physicians generally work long and tedious hours; often little time is allowed for vacation. Our work schedules are planned with precision but our leisure time is haphazard. I, too, am guilty of this oversight and deserve just criticism. More physicians are now in group practices where vacation allocations are spelled out in the contract. For the solo practitioner, however, the planning is often poor, and the concept of vacation is too frequently "time off" for a medical convention or postgraduate conference.

Recently, I read of a group of physicians who take sabbatical leaves of up to 12 months every 6 or 7 years. Their leave is contingent on arrangements having been made for a substitute during the absence. This approach allows for minimum income loss and assures the medical practice will be maintained. Does that sound outlandish? Not when we see other learned professions provide such perquisites while pursuing the demands of the job. Professors are accustomed to sabbaticals; missionaries often return to the States for an extended sabbatical — traditionally, 1 year of leave for rest, research or further study every 7 years. These are usually without loss of income.

For some practitioners this is impractical — to leave every 7 years — unless provision can be made for a substitute physician to care for the patients. Imagine the hue and cry of the townspeople when "Doc" takes off a whole year! In metropolitan centers with large group practices, the impact is not so noticeable. In fact, the temporary injection of "new blood" into the group may pay dividends and provide a "proving ground" for a potential new member. There is a risk, however: The clientele of the original physician may be usurped by the short-term practitioner to create turmoil. Safeguards need to be built into the planning of such sabbaticals.

My hope is that our readers have enjoyed a summer vacation without being involved simultaneously in a medical conference. My children are grown and on their own. As I look back at their childhood, I realize they were considered secondarily. Too often the practice came first; other people's children were "more important" than my own. That, in retrospect, is a personal regret and a tragedy I committed upon our 4 great children. I sincerely hope you younger readers will realize that medicine is a "jealous mistress" — but do not let it deter you from family responsibilities. It is not abandonment to take time off (as long as you provide for the care of your patients in your absence). — M.E.A.

Historical Vignettes

LOOKING BACK

In cooperation with the IMS Historical Committee, we are commemorating our 75th anniversary by saluting the past.

EARLY HMO!

THESE FIGURES we get from a British Medical Journal, and over there is where they know all about lodge practice, to their sorrow: A lodge of 100 members would have during each year 234 weeks of illness. For this the attending physician would receive about $125. This would be equivalent to attending one man continuously for 234 weeks or 4 years and 6 and a half months for $125. This would be about 53 cents a week, and on the basis of one call daily, would amount to 7½ cents a call, including surgical dressings.

You Eagle, Owl, Moose and Pole Cat doctors deny these figures if you can, and we will gladly publish them for you next month. JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, 1912; VOL 1:463.

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OF FAKES, FRAUDS AND CHARLATANS there is no end. Such always has been, and such it always will be. Now we have with us Vimedia with its agents. It is a cure all for every ill which affects womankind — makes menstruation, parturition and the menopause painless and without nervous manifestations, cures lacerations by absorbing scar tissue, removes tumors; etc. The method of introduction is on the same plan as that of Viavi. A woman — usually an M.D. — comes to town, gets to lecture in a church or rest room, tells women all manner of suffering is her share, and the only cure is Vimedia — price $23. We suggest that physicians keep a watchful eye on these charitably inclined females who thus desecrate public meeting places. There are so many things which would be so nice if they were only true, and Vimedia is one of them. JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, 1912; VOL 1:569.

QUESTIONS AND ANSWERS

(Continued from page 395)

centration of costs has been located. However, we are now trying to give more visibility to the issue of access to rural health care. We recently held a series of 4 rural health care symposia around the state and we also commissioned a study on this subject. This is another area where we believe local communities must get together and plan.

We understand the HPCI has appointed a task force on health care market forces. What is its charge?

The Market Forces Task Force is charged with developing market forces strategy for Iowans. The task force is comprised of physicians, hospital administrators and business, labor and government representatives. The intent of the task force is to bring both public and private sectors together to plan. The task force will determine what kinds of health care services are needed in Iowa and investigate sources of support available to provide those services and resources at a cost affordable to Iowans in that area. The task force will try to develop statewide recommendations on health care that can also be applicable to specific areas of the state. The task force will be making those recommendations in November.

Do you foresee any changes in the direction of the HPCI under your leadership?

The HPCI will stay with its major objective — improving Iowa's health care system at a cost we can afford. Our interest is in bringing the purchasing and providing communities together to control the delivery and quality of health care in this state. We can't have any one sector in control; all the parties must move together in an active fashion.

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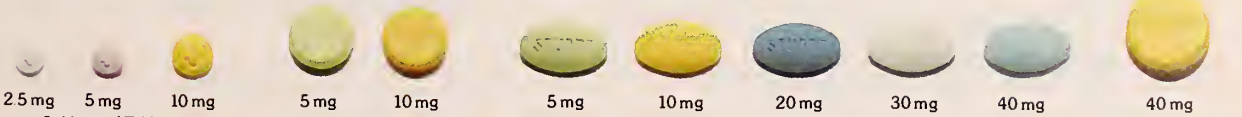


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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg, for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg), Chewable Tablets (5, 10 mg), Oral Tablets (5, 10, 20, 30, 40 mg), Sustained Action Tablets (40 mg).

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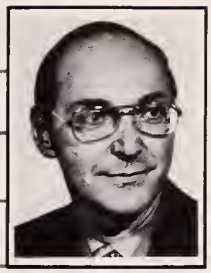
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



HOMAGE TO MY DAD

THERE ARE milestones on all the days of your life, if you pause to look, but especially on that one day that is unquestionably unique: the burial of your father. Consciousness fills with memories — all kinds, not just romantically glowing ones. And the death of a loved one prompts a loud chiming of your own clock. The passing of the second parent, the status of orphanhood may be akin to the passage from caterpillar to butterfly; you enter a time of resplendent seniority, but among humans, at least, you *know* — and now, *feel* — it is your own final stage.

This is not the place to write a general eulogy, but simply to reflect on the modes of my dad's education. Formal education — little. When he arrived in the USA at age 16 in 1914, he had only that lean background of literacy and knowledge to be had from religiously orthodox study in turn-of-the-century rural Lithuania. Arrival in Des Moines, the need to find work in the grocery business, and to train for assimilation and citizenship — those were achieved through night school's equivalent of a third-grade diploma. Much, much later he would enroll formally in an evening course to obtain a license as a real-estate broker (unused) and a brief course in water-color painting (unused) and yet another in introductory Spanish (unused). But those were all in retirement and approached with the stance that if they had practical utility, fine, but if not, the process of learning could be its own reward.

The education of Carl Caplan was little like (so far as I know) the hilarious night school *Education of H*Y*M*A*N* K*A*P*A*P*L*A*N* (as told by Leo Rosten under the pen name Leonard Q. Ross), except that it likewise served to provide the skills needed in speech, reading, writing and numbers that would be needed for citizenship and success in daily affairs. No, his principal education was a tribute to the methods most used throughout human history — on-the-job and trial-and-error. Of the 7 fundamental intelligences enumerated by Howard Gardner (*Frames of Mind, A Theory of Multiple Intelligences,* Basic Books, Inc., New York, 1983), strong were his personal skills in relating successfully to others, verbal skills and quantitative skills (not for abstractions but for marketplace use), while music, spatial and visual arts, body use, and special sensitivity to one's own self and feelings could be placed lower on the profile. But the "learning styles" — that was clear: hard work, long hours, desire to be useful to others and to be well regarded by them. And where was the classroom, the laboratory? Not in the world of publish-or-perish, but in the rough and tumble world of make-it-or-perish, succeed-or-sink. There were no multiple choice exams on paper, only real world multiple choices. The assignment was not to read in a textbook. It was to hustle — sniff out a bargain, sell it at a profit, win friendships, provide service, and find and share love, work and two children with a strong and able wife, and after becoming a widower, another strong and able wife.

YES, THAT WAS the style: Learning by doing, talking with and studying the behavior of colleagues and competitors, especially the ones who really seemed to be cutting the mustard, what we might today term the educational influential — you know, *"when EF Hutton talks . . ."* There was the learning and pride that came with being chosen president of a senior-citizens group, for which some rudiments of parliamentary procedure had to be mastered; the recognition associated with

(Please turn to page 421)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.



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University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

UNIT DOSE/CLINICAL PHARMACY: A TWENTY-YEAR PERSPECTIVE

This year marks the twentieth anniversary of a study (conducted at The University of Iowa Hospitals and Clinics) that designed, implemented, and measured several indicants of a new, decentralized pharmacy system that integrated distribution and clinical services.[1] The concept, which came to be known as the Unit Dose/Clinical Pharmacy System (hereafter referred to as the Unit Dose System), revolutionized the delivery of hospital pharmacy services throughout the U.S.A. The Unit Dose System has ultimately become the standard of hospital pharmacy practice for 80% of all hospitals and is required and/or strongly recommended by credentialing bodies of the Joint Commission on Accreditation of Hospitals (JCAH) and the American Society of Hospital Pharmacists (ASHP), most states' departments of health, and some state legislatures.[2, 3, 4, 5, 6] Numerous studies have shown that the Unit Dose System provides higher quality of service and is cost-effective.[7] By inserting the pharmacist into the medication cycle, the Unit Dose System takes advantage of the pharmacist's 5 to 7 years of specialized education and training in drug therapy, "frees up" 5.5 full-time equivalent (FTE) nurses per pharmacy substation serving multiple patient care units (PCUs), and reduces medication errors in each of the 5 phases of the medication cycle (i.e., ordering, transcribing, preparing, administering, and recording fulfillment).[8] The purpose of this article is to review the development and advantages of the Unit Dose System from a 20 year perspective and to consider future goals/needs that must be addressed.

Pre-Unit Dose Pharmacy System

Medication Cycle

The pre-unit dose medication cycle (Figure 1) requires the nurse to extract medication orders from an unstructured, open-ended sheet which included the physician's treatment, therapy, laboratory and nursing care orders — all in narrative form. The nurse then interpreted and transcribed the medication to be administered to a nurses' medication Kardex. The next step was to determine whether or not the medication was in the "ward stock" supply on the nurses' station which included an assortment of over 200 medications. If the medication was not available from "ward stock," the ward clerk transcribed a second time the drug name and strength (not dose, interval, or patient name) onto a pharmacy requisition which was sent to pharmacy, usually located in the basement — and thus remote from the source of patient-specific drug order data. The pharmacist responded by sending a bulk drug supply (e.g., multiple-dose injection vials or 100 tablets) intended for several patients. Prior to each medication time, the nurse prepared or compounded the doses for each patient. Preparation activities ranged from the counting of a few tablets, to the sterile compounding of large-volume intravenous solutions and small-volume injections. Prepared doses were placed in paper cups on a "stair-steps-with-holes" cart along with

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(Continued from page 410)

medications for all other patients scheduled to receive doses at that time. This drug administration cart did not segregate the medications for a given patient into one labeled compartment, nor did the prepared doses have any identifying labeling (as to patient or drug name). After "passing meds," the nurse returned to the medication room to record fulfillment in each patient's chart — relying principally on recall because the charts were not available as each dose was administered. Thus the nurse was solely responsible for drug order interpretation, evaluation, acquisition, receiving, and inventory control for over 200 medications as well as all drug preparation activities. The nurses' "practice of pharmacy" consumed an average of 8 hours per day per PCU.[8] Of course, this 8 hours was the aggregate quantity of time released from medication activities accruing from multiple nurses on each PCU.

Deficiencies of Pre-Unit Dose Systems

Each phase of the medication cycle presented opportunity for undetected medication errors because there was no "double-check" system between pharmacy and nursing. Physician orders were not reviewed by a pharmacist; therefore, suggestions for improving the safety or effectiveness of a specific drug order were not made. Misunderstanding the interpretation of a physician's handwriting or nursing transcription errors (such as a missed decimal point) could go undetected for several administration cycles if initially placed incorrectly on the medication administration Kardex. Inaccuracies in medication preparation or the accidental administration of an unlabeled medication to the wrong patient were errors that the system failed to prevent. Recording medication fulfillment after administration was done from memory after all meds were "passed" for 20 patients. Omissions or errors in charting doses administered resulted in an inaccurate medical record, opportunity for duplicate administration of the dose by the next shift, as well as lost revenue (patients are charged from medication administration records, not from dispensing records).

Other deficiencies unrelated to the medication cycle existed in the pre-Unit Dose System. Hospital drug inventory costs were high due to the existence of 200 drug items at each of 50 PCUs. Drug waste resulted when multiple dose vials were only partially utilized or bulk supplies expired on the unit. Sometimes expired or contaminated doses were administered. Compounding of sterile injections was done by nurses without the benefit of a laminar flow hood (to protect the medication) and without the pharmacist's training and expertise in drug compatibilities and so forth. Deliveries of bulk supplies of drugs from pharmacy occurred at daily intervals — with intervening needs fulfilled by nursing personnel going to the basement pharmacy. Most importantly, nurses were required to practice pharmacy along with numerous other nursing-related responsibilities, whereas the pharmacist's training and expertise went largely unutilized. The rapid introduction of numerous new therapeutic entities and complicated medication regimens in the 1950s and 1960s crystallized the need for a better system — one that would more accurately and reliably assure the delivery of the right drug and dose to the right patient at the right time. Out of this emerged the Unit Dose/Clinical Pharmacy System at Iowa.

Unit Dose System Description

Unit Dose/Clinical Pharmacy System services are comprised of 2 primary components: drug distribution services and clinical pharmacy services. Although described separately herein for reasons of clarity, these 2 components of the Unit Dose System are inextricably intertwined and cannot be separated without great risk of losing the safety net, the efficiency, and the overall effectiveness provided by this system of pharmacy service.

Drug Distribution Services

The pharmacist was relocated from the basement to a decentralized pharmacy substation at the floor level, serving about 100 beds on 5 or 6 nearby PCUs. Responsibility for drug preparation and other components of pharmacy practice were transferred from the nurse to a pharmacist. Under the pharmacist's supervision, pharmacy technicians prepare all doses

in a ready-to-administer form — labeled up to bedside. Specialized equipment such as laminar flow hoods are used to protect the product as well as the preparer. By centralizing drug preparation activities, pharmacy can take advantage of the labor economies of batch processing, monitor quality control, and reduce drug waste. A system of double checks is initiated for both order evaluation and drug preparation. Products prepared by pharmacy include crystalloid intravenous admixtures, sterile fluids for total parenteral nutrition (TPN), small-volume injectables such as antibiotics, sterile peritoneal dialysis solutions, cancer chemotherapy for protocol and nonprotocol patients, and investigational drugs of other types.

Clinical Pharmacy Services

Along with relocation of the pharmacist from the basement to the PCU level, came the pharmacist's receipt of a direct copy of the medication order which included all current drug orders in an organized, structured format. This information permitted the pharmacist to evaluate new orders and order changes in the context of patient demographic information, problem list, other current orders, and patient laboratory test results. Although this review is now considered to be a rudimentary function (and is now required by JCAH), in 1964 it was a revolutionary change that was the stepping-stone to the role that today's hospital pharmacist plays in monitoring drug therapy.

The clinical component of University Hospitals' Unit Dose/Clinical Pharmacy services requires the pharmacist to prospectively monitor each new drug order (or order change) for safety, potential for drug interactions, and dose evaluation in relation to baseline renal and hepatic function for each patient. The pharmacist maintains a patient profile consisting of patient problem list, allergies, age, weight, lab indices, and communication with other members of the health care team as well as the results of these interactions. Patients who fall into specific categories based on renal or hepatic function or type of drug therapy (e.g., aminoglycosides or cancer chemotherapy) are monitored more intensely including pharmacokinetic evaluations. Other clinical pharmacy services include provision of drug information, discharge prescription consultation at the patient's bedside, drug history interviews for select patients, and in-service education programs.

Innovations Resulting from Unit Dose Study at The University of Iowa Hospitals and Clinics

The complete restructuring of the medication cycle (Figure 2) resulted in conception, development, and implementation of several innovations/inventions which have contributed substantially to the safety and efficiency of drug therapy at this hospital and throughout the world. The innovations pioneered at The University of Iowa Hospitals and Clinics Pharmacy Department include

(1) *Unit Dose Packaging* — The provision of each dose in a labeled, ready-to-administer form reduces opportunity for error and reduces waste (unused doses can frequently be recycled). Guidelines for unit dose product labeling and packaging which were designed by The University of Iowa in the early 1960s are still in use nationwide today. Conversion by hospital pharmacies to the Unit Dose System is so widespread that most manufacturers routinely market new drugs in unit dose packaging. This single element has contributed greatly to the safety of patient care.

(2) *Pharmacy Technicians* — A new category of health care providers was established to support the pharmacists' professional role. These individuals were trained in an intensive, six-week program to perform technical functions of medication preparation and delivery — at half of the hourly rate of the nursing staff or pharmacy staff who formerly performed most of these functions. Technician work is supervised and checked by a pharmacist, thus providing a double check not available when one person prepared and immediately administered a dose. Unit dose packaging permits this cost-containment measure because the professional can make a terminal check in lieu of several in-process checks.

(3) *The Iowa Drug Information System (IDIS)* — The need for accessible broad-based drug information resulted in the invention of IDIS. IDIS is now a commercially marketed drug information service which provides direct access via microfilm and computer indexing of 50,000 drug-related articles from over 140 biomedical

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(Continued from page 413)

journals. It was conceived by this department in January 1964 specifically to support the Unit Dose System and is now subscribed to by 650 worldwide clients.

(4) *The Doctors' Orders (A-1a) Form* — A new, structured form was designed to separate drug orders from other diet, laboratory, nursing care, and treatment orders so that the likelihood of an order or order change being overlooked is nearly eliminated.

The drug order section of the A-1a was also highly structured to sequence drug orders into 1 standard format (date, drug name, dose, route, and interval). This element improved safety and efficiency of the drug order writing process, substantially reducing the rewrite error rate.[9] Such an improvement in the medication order form structure has obvious advantages for the medical students' education, house staff authentication, and clinical faculty review for teaching, research, and patient care purposes.

The A-1a is designed to provide a direct copy of each new or changed medication order to the pharmacist. By virtue of the independent interpretation of each medication order by a pharmacist (rather than relying solely on the nursing interpretation as in the pre-unit dose days), a double-check system is instituted between pharmacy and nursing.

The structured format of the A-1a is such that the copy sent to pharmacy becomes the dispensing record. This avoids further transcription of the order by pharmacy, thus inserting a high degree of accuracy and efficiency.

(5) *Unit Dose Medication Cart* — A medication cart was specifically designed for the 1964 Unit Dose Study and has subsequently become the benchmark for all hospitals throughout the nation. The cart provides a medication bin containing a 24-hour supply of individually labeled medications in a ready-to-administer form for each patient, arranged by bed sequence. In addition the cart provides storage space for drug administration supplies such as alcohol swabs and needles. The top of the cart provides a portable work surface for medication verification (the final double check), storage location for the standard reference (*Formulary and Handbook*), and a surface on which to make notations at bedside as drug administration occurs.

(6) *Medication Administration Kardex* — The "medication Kardex" refers to the structured *form* for recording medication administration as well as the metal and plastic *receptacle* which contains all the individual patients' Kardex forms and resides on top of the medication cart. The Kardex system was designed to improve accuracy of recording medication administration by transferring this process to the patient's bedside along with the medication adminstration process. The medication Kardex (A-1a (M)) and intravenous Kardex (A-1a (I)) are formated like the Doctors' Orders Form (A-1a). This structure provides clarity, organization, and consistency to the recording of medication administration. Recording accuracy improved 12% with the implementation of the Kardex system — resulting in a more accurate medical record and a 12% increase in the accuracy of revenue generation.[8]

(7) *The Formulary and Handbook* — University Hospitals became the first hospital in this country to provide an automated *Formulary and Handbook* that included drug monographs, explanatory statements, dosing information, along with products approved for stock. The entire text was loaded onto computer storage and a program written in 1969 in anticipation of being able to provide current information via computer screens to aid physicians, nurses, and pharmacists in the selection, preparation, and administration of medications. Completion of the automated drug order entry system will permit this plan to come to fruition.

Benefits Offered by the Unit Dose System

Cost benefits of the Unit Dose System are numerous. The Government Accounting Office (GAO) found the Unit Dose System "has the lowest life cycle cost of all the systems plus the benefits of lower dosage error rates and increased patient charting accuracy."[7] The Iowa study showed that the Unit Dose System "freed up" nursing time for other patient care activities. At the same time, the drug preparation was transferred to pharmacy technicians at a lower labor cost. The 12% improvement in medication charting accuracy which resulted

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Figure 1
Pre-Unit Dose Medication Cycle

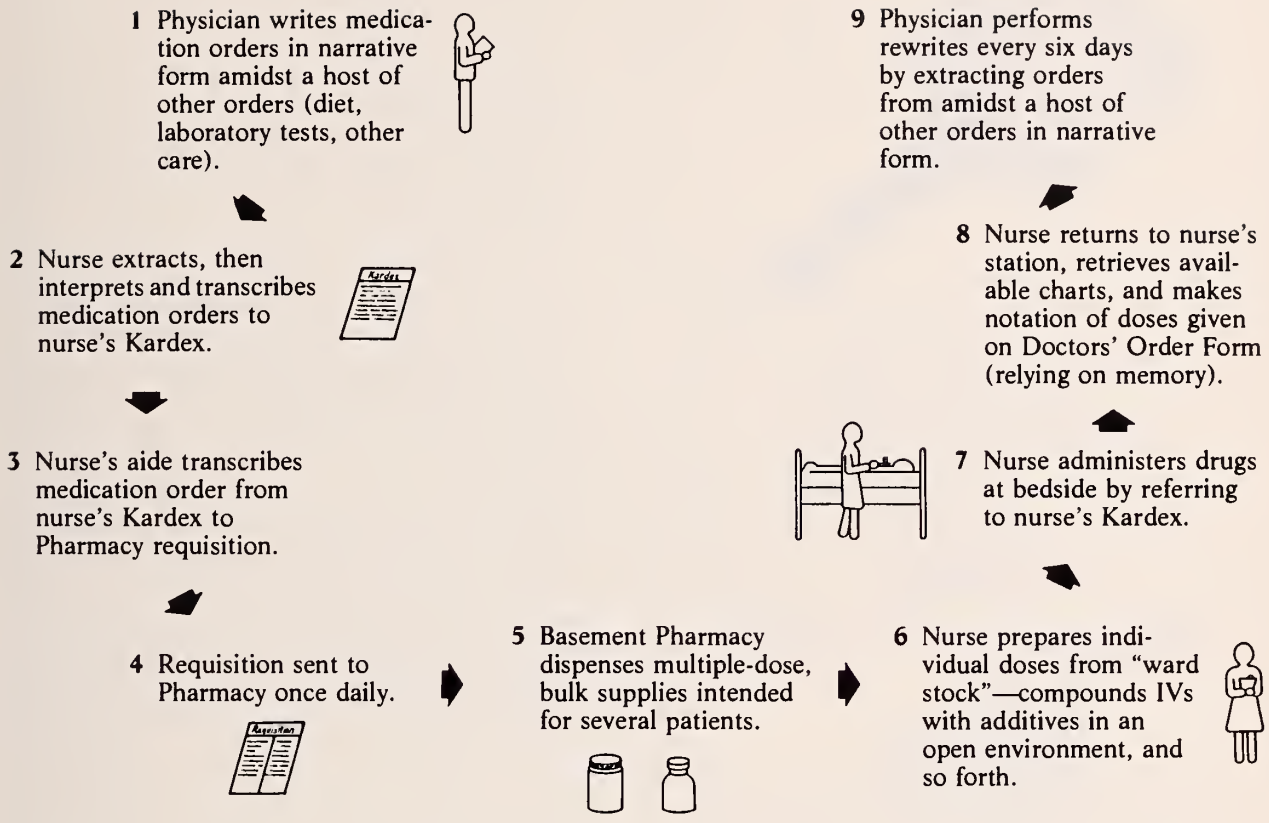
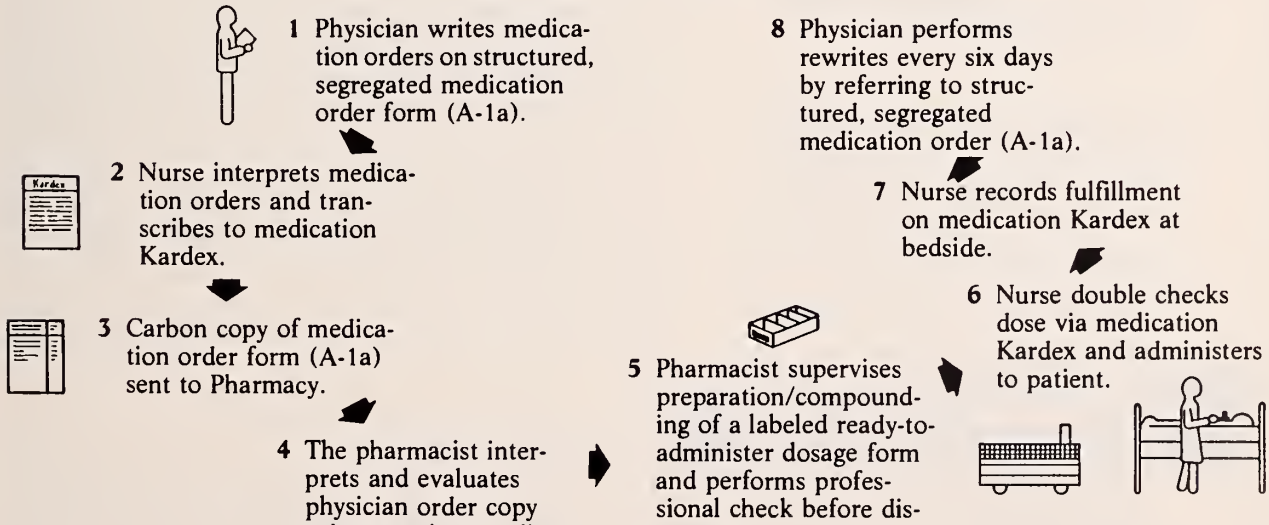


Figure 2
Unit Dose System Medication Cycle





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from the restructured medication Kardex represents an increase in revenue of over $1 million annually. Increased packaging costs have been offset by reduced drug waste, greater efficiency via batch processing, and lower costs per hour of labor.

In a University of Arkansas study, Barker and McConnell found 1 medication error for every 6 medications administered in the pre-unit dose drug distribution system.[10] The University of Iowa study found a substantial reduction in error commission at each phase of the medication cycle after the implementation of the Unit Dose System.[8] A subsequent Arkansas study found an error reduction from 13.5% to 1.8% with institution of a Unit Dose System.[11] Investigative studies at other institutions have shown that clinical pharmacy services can result in lower drug cost, decreased length of stay, and fewer incidences of adverse drug reactions.[12,13] Less easily measured safety features are the personnel and product protection offered by the ability to prepare all injectable products in the "sterile" environment of the laminar flow hood with the Unit Dose System.

The double checks implemented throughout the unit dose medication order cycle result in one of the system's greatest payoffs — improved patient safety. Particularly in a tertiary care teaching hospital where the patient is most critically ill, the drug therapy is the most complex, and some members of the health care team are in various stages of training, the existence of a series of double checks is critical to preserving patient safety. The pharmacist's dual role in this system is (1) to prospectively monitor drug therapy as to dose, appropriateness, cost, and potential for drug interactions, and (2) to assure delivery of the prepared drug product in a safe, accurate, and timely manner.

New Directions

Current and future unit dose/clinical efforts will be directed at clinical and distributive workload measurement as relates to cost and quality of care. Research is in the planning

stage to determine the extent to which drug dispensing activities can safely be assigned to pharmacy technicians while still meeting all applicable codes and ensuring that patient care services are maintained or improved. Automation of the medication order cycle is also under way. Automated drug order entry and communication will represent the most substantial leap forward in unit dose services since the Doctors' Orders Form (A-1a) was designed in 1973 to cause the physician to structure drug orders in anticipation of automation. At the present time it is presumed that some physicians will not opt to input their own medication orders due to the time requirements — perhaps until voice input is available and reliable. However, the planned system will provide for any physician to do so if he or she chooses and this process will be encouraged. Initially order input will be performed by support personnel. Automation will provide the nurse, pharmacist, and physician more information, more timely data, and more interrelationship facts among data elements to aid in their combined roles in delivering the best medication therapy achievable in this tertiary care hospital.

Conclusion

The Unit Dose/Clinical Pharmacy System has been in existence in portions of University Hospitals since the "pioneering research" conducted via the U.S. Public Health Service Grant in 1964 through 1966. The system has become the national standard of practice as mandated by JCAH and other regulatory/credentialing bodies. Future efforts in this institution will include analysis of cost/benefits, automation, expansion of this type of service to all beds, and exploration of future roles in ambulatory care as more hospital care occurs on an outpatient basis — HAROLD J. BLACK, *Director of Pharmacy, University of Iowa Hospitals and Clinics.*

Acknowlegement

The author expresses appreciation to the following Pharmacy Administrative staff for assistance in the preparation of this article: D. Cassel, M.S. (Assistant Director for Unit Dose/Clinical Pharmacy Services), and J. Hood, M.S. (Clinical Pharmacy Practice Coordinator).

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

LONG-TERM CARE

THE Governor's Task Force on Long-Term Care is one year old. It has done much work. Much remains to be done.

The task force has issued a preliminary report. As of July 22, 1985, this report became available in each county seat library in Iowa, according to Daniel J. Boesen, executive director of the task force.

In appointing the 14-member task force on August 13, 1984, Governor Terry Branstad stressed that as Iowa's population ages, the demand for long-term care services will increase rapidly. He said it is imperative Iowa have a comprehensive plan to meet the service needs of Iowans. He charged the group to develop such a plan.

A 2-day planning session was held by the task force where Iowa's leading payors, planners, regulators and providers identified issues they felt the task force should consider.

Essential to the multi-faceted deliberations of the task force was a definition of long-term care: *"One or more services provided on a sustained basis to enable individuals whose functional capacities are impaired to be maintained at their maximum levels of psychological, physical and social well-being. The recipients of services can reside anywhere along a continuum, from their own homes to any type of institutional facility."*

Throughout its first year, the task force has heard from a wide spectrum of persons. Recognizing the importance of broad input, a series of public hearings has been held at which interested persons were permitted to speak. These hearings were held in Red Oak, Spencer, Mt. Pleasant, Waterloo and Des Moines. At each hearing, Jack Watson, chairperson, summarized the task force findings. Individuals who wished to speak, and had given advance notice of this desire, were heard first. Others were given the opportunity to be heard, on a time-permitting basis.

In its preliminary report, the task force said there is urgent need for change in the organization of the Iowa long-term care system. They said lack of coordination and fragmentation of services have persisted since before the 1970's resulting in people having difficulty finding or gaining access to needed services. In addition, said the report, the medical aspects of long-term care have been emphasized instead of a more complete approach which would include appropriate services to meet psycho-social needs. Another vital point, said the task force, is that the need for services across Iowa has not been clearly identified.

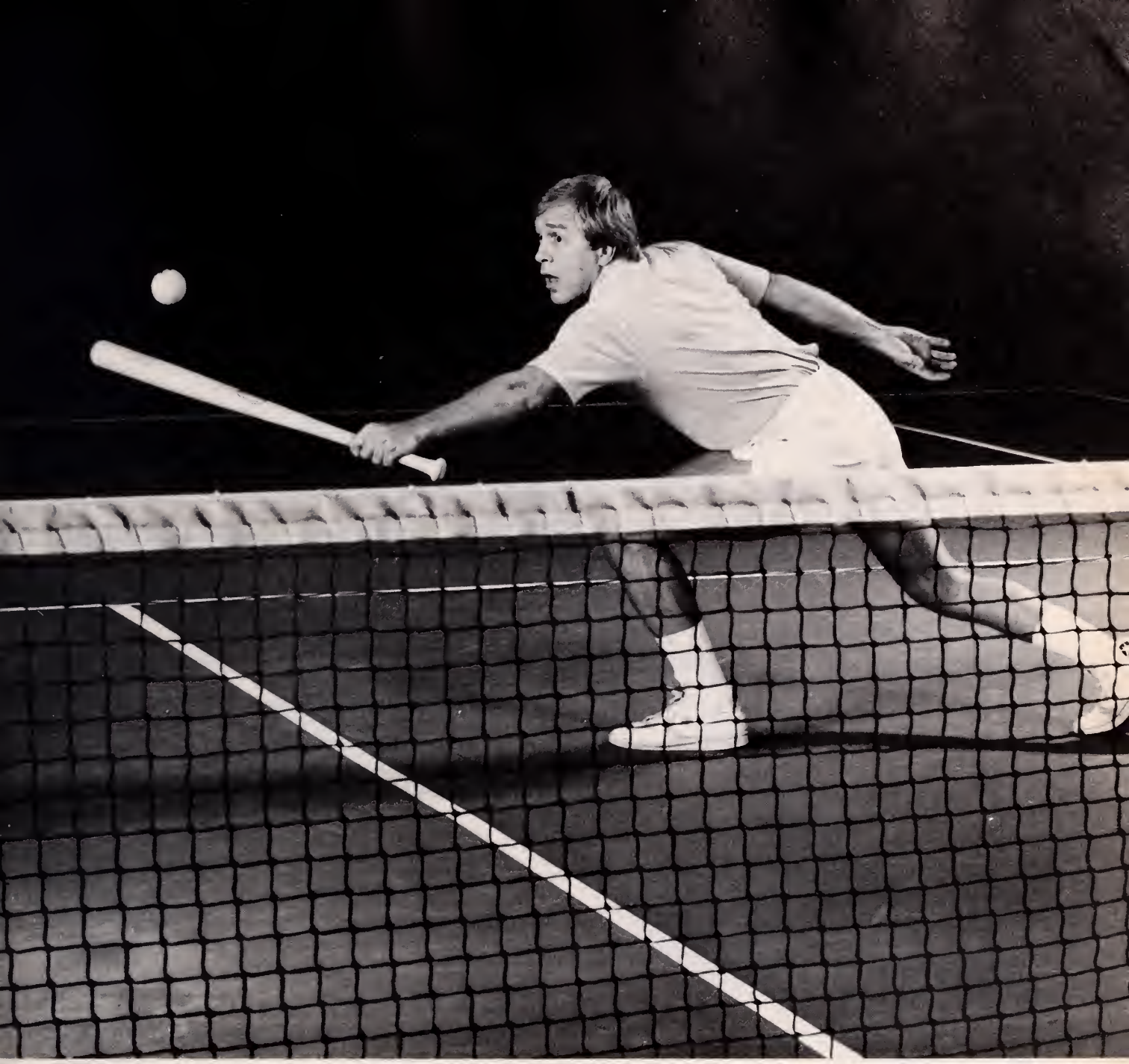
The task force is recommending 3 key changes which it deems essential if the needs of Iowa citizens are to be met — both now and in the future. They are:

1. *Formation of an Iowa Long-Term Care Commission comprised of the commissioners of Health and Human Services, the executive director of the Iowa Commission on Aging, a consumer advocate and 3 at-large members appointed by the Governor. The Long-Term Care Commission needs to be established and underway by January 1, 1986.*
2. *Passage of legislation during the 1986 legislative session to establish authority and funding for a centralized data base.*
3. *Comprehensive needs assessment and case management systems with the goal of implementation by January 1, 1987.*

These 3 recommendations, said the task force, provide the structure through which other recommendations can be carried out. Other recommendations are expected to be carried out on a one-year to 5-year time frame

(Please turn to page 421)

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with efforts extending to 10 years and beyond. Some recommendations call for an immediate, one-time action; others will require study and implementation over a number of years.

The task force also emphasized prevention of illness and disability as import factors in limiting the number of people needing long-term care in the future and requested the Governor to establish a separate task force to identify health promotion strategies that could be implemented statewide.

Long-term care is a complex matter that will require perhaps years of painstaking planning and attention before workable solutions are in place and working. Persons wishing to contact the task force may do so as follows: Governor's Task Force on Long-Term Care, Daniel Boesen — Executive Director, 601 Locust, Suite 330, Des Moines, IA 50309 (515/244-1955).

Task force members include: Jack Watson, Chair; Dr. Paul Magelli, former chair; Fred Weitz, vice-chair; Bill Anders, Ruth Anderson, Dr. William Bliss, C. Lee Cooper, Penny Davidsen, Lois Eichaker, Vennetta Fiedler, Jane Hawks, Edward Jones, Dr. Paul Werger, George Wilson and Sue Yenger.

OUR MAN IN EDUCATION

(Continued from page 407)

several years of service as an in-retirement free consultant to the Small Business Administration, and its loan applicants; and being active, on the go with local meetings, charities, and travel to special places. On such trips there was so much to see, to absorb, to learn.

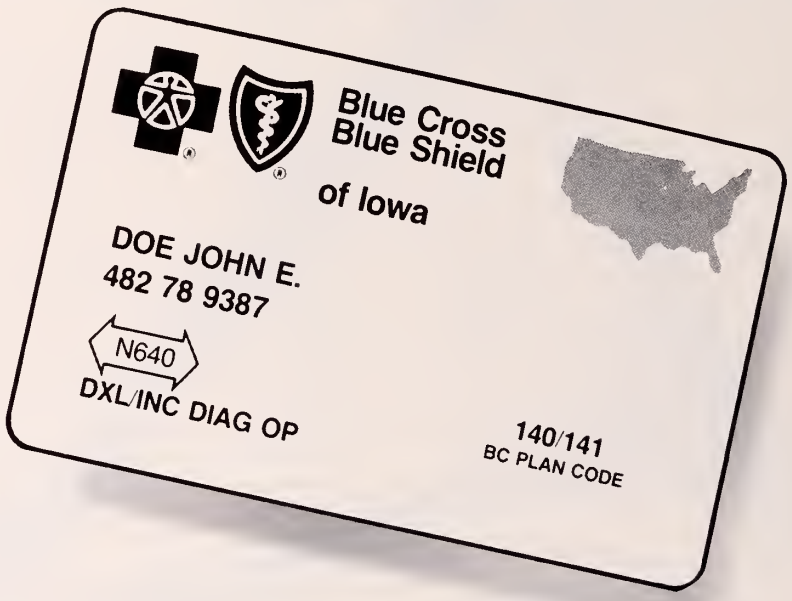
And then came the final year of sad winding down to that status when nothing was *particularly* wrong, but just that everything was worn out — that gradual decrease in energy, breath, weight, strength, and ultimately the failing of the cherished mental clarity and memories. When all those tough omens were stacked in place, then the time came to yield, at peace during the night. And the often repeated phrase, especially near the end, "I hope it will all work out for the best" was not just a Pollyanna statement, but an expression of wisdom that we might each come to know, but only in our respective seasons. The process of learning goes on throughout life's sentient experience, even during the running down, and possibly even beyond that.

July 1985 Morbidity Report

Disease	July 1985 Total	1985 to Date	1984 to Date	Most July Cases Reported From These Counties
Amebiasis	3	5	45	Apponaase, Jahnsan, O'Brien
Brucellasis	0	1	1	
Chickenpax	18	5336	6384	Scattered
Compylabacter	49	159	152	Scattered
Cytamegolavirus	1	4	9	Linn
Eotan's Agent infectian	0	6	27	
Encephalitis, viral	0	11	9	
Erythema infectiasum	0	0	51	
Gastraenteritis (GIV)	34	10089	8751	Scattered
Giordiasis	54	228	126	Scattered
Hepatitis, A	2	26	31	Flayd, Sac
Hepatitis, B	7	57	62	Scottered
Hepatitis, Non A-B	2	12	12	Crawfard, Muscotine
Hepatitis type unspecified	0	5	8	
Herpes Simplex	74	628	528	Scattered
Herpes Zaster	0	0	2	
Histaplasmasis	3	14	16	Haword, Linn
Infectiaus mananucleasis	1	105	100	Polk
Influenzo, lab canfirmed	0	169	176	
Influenza-like illness (URI)	58	24995	30748	Scattered
Legianellosis	1	4	1	Pattawattomie
Malaria	0	1	1	
Meningitis aseptic	6	17	18	Dubuque, Lucas, Palk, Scott
bocterial	7	85	71	Chickosaw, Dubuque Jasper, Linn, Polk
meningacoccal	0	7	19	
Mumps	1	9	17	Dubuque
Pertussis	2	5	5	Palk, Scott
Rabies in animals	15	102	96	Scattered
Reye Syndrame	0	4	2	
Rheumotic Fever	1	1	0	Janes
Rubella (German meosles)	0	1	1	
Meosles	0	0	0	
Salmanellasis	55	166	125	Scattered
Shigellosis	1	10	25	Humboldt
Taxic Shack Syndrame	0	5	9	
Tuberculasis tatal ill	4	42	40	Howard, Lee, Linn, Muscatine
boct. pas.	2	39	34	Haward, Linn
Typhoid Fever	1	1	0	Palk
Venereol diseases:				
Ganarrheo	369	2480	2448	Scattered
Syphilis	1	15	10	Johnsan

Other Nan-Reportoble Diseoses: Echa — 1, Scott; Ratavirus — 1, Palk; Ureoplasmo Urealyticum — 1, Palk; Yersina — 2, Jahnsan, 1, Palk.

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tious diseases in Cairo, followed by a pediatric residency at Henry Ford Hospital in Detroit, Michigan, where he has been chief pediatric resident the past year.

Dr. Meryl A. Severson and **Dr. Peter T. Silberstein** to the Park Clinic at the North Iowa Medical Center in Mason City. Dr. Severson received the M.D. degree at the West Virginia School of Medicine; he served a rotating internship in Washington, Pennsylvania and had a residency in obstetrics and gynecology at the Charleston Area Medical Center in Charleston, West Virginia. Dr. Silberstein received the M.D. degree at State University of New York in Buffalo; he had a fellowship in hematology-oncology at the University of Minnesota and a residency in internal medicine at the U. of I. Hospitals and Clinics. . . . **Dr. John S. DePriest** to the Gaukel-Wolpert Clinic in Onawa. Dr. DePriest received the M.D. degree at the University of Nebraska and served a family practice residency at Kern Medical Center in Bakersfield, California. Prior to locating in Onawa, Dr. DePriest practiced in Atkinson and South Sioux City, Nebraska. . . . **Dr. Kevin A. O'Connor** to the Poweshiek County Mental Health Center in Grinnell. Dr. O'Connor received the M.D. degree at the University of Rochester School of Medicine in Rochester, New York. He had his postgraduate training at the UCLA Neuropsychiatric Institute. . . . **Dr. Dan Swoyer** to the Creston Medical Clinic. Dr. Swoyer received the M.D. degree at the U. of I. and had his surgery residency at Wesley Medical Center in Wichita, Kansas. . . . **Dr. Henry Richards** has joined **Dr. Greg Hoekstra** at the Family Health Center in Toledo. Dr. Richards received the M.D. degree at the University of Maryland and has completed an internal medicine residency. . . . **Dr. Andrew Edwards** has joined **Drs. Michael J. Gimbell, II; Richard B. Kasper; Warne F. Ramsey** and **Alan R. Swearingen** at the Bettendorf Medical Center. Dr. Edwards received the M.D. degree at Rush Medical College in Chicago and had his family practice residency in Davenport.

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Dr. John Deck has joined **Dr. George F. Fieselmann** in family practice in Spencer. Dr. Deck received the M.D. degree at the University of Nebraska and had his family practice residency in Lincoln, Nebraska. . . . **Dr. James Karkos** to the Park Clinic in Mason City. Dr. Karkos received the M.D. degree at the University of Illinois and had internal medicine and dermatology residencies at the University of Illinois Medical Center in Chicago . . .**Dr. Margaret R. Draeger** to the Bluff Medical Center in Clinton. Dr. Draegar received the M.D. degree at the University of Wisconsin and had an obstetrics and gynecology residency at the Geisinger Medical Center in Danville, Pennsylvania. Prior to locating in Clinton, Dr. Draeger was assistant chief, Department of Obstetrics and Gynecology, Blanchfield Army Hospital, Fort Campbell, Kentucky. . . . **Dr. Mark Strope** began family practice in Hamilton in July. Dr. Strope received the M.D. degree at the U. of I. and had his family practice residency at East Carolina University School of Medicine in Greenville, North Carolina.

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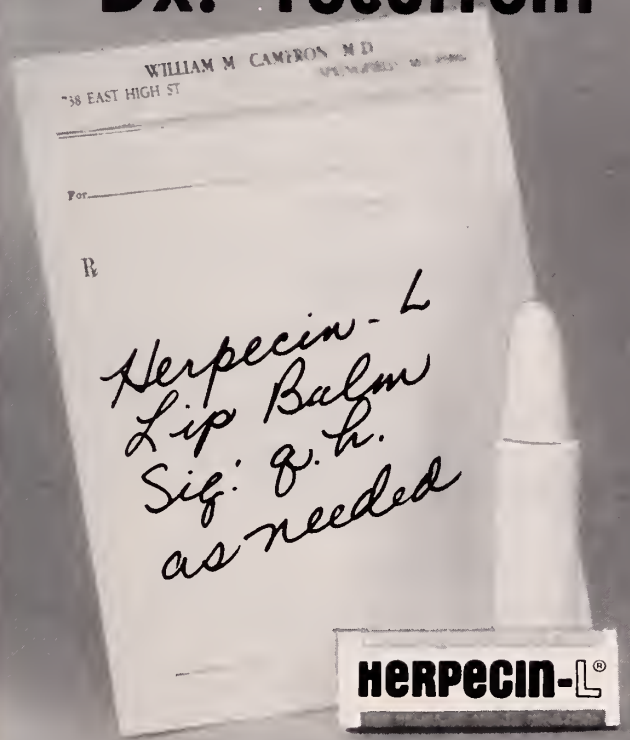
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DEATHS

Dr. Leslie W. "Bill" Swanson, 72, longtime Mason City physician, died at a Mason City hospital August 5. Dr. Swanson received the M.D. degree at the U. of I. College of Medicine; interned at Albany Hospital in Albany, New York and served his internal medicine residency at University of Iowa Hospitals. He began private practice in Mason City in 1942, retiring in 1983. Dr. Swanson served as AMA delegate for the Iowa Medical Society from 1951-1976 and was president of the IMS in 1978. He was a past president of the Mason City Chamber of Commerce; Mason City Rotary Club; Iowa Heart Association, and the Cerro Gordo County Medical Society.

Dr. James E. Reeder, Jr., Sioux City, 75, died June 25 at a Sioux City hospital. Dr. Reeder received the M.D. degree at the U. of I. College of Medicine, interned and served a residency at the Illinois Eye, Ear, Nose and Throat Infirmary in Chicago. He began medical practice in Sioux City in 1939. Dr. Reeder was a former Sioux City mayor; member of American Academy of Ophthalmology; American College of Surgeons; Pan American Ophthalmology Society; American Association for Research in Ophthalmology and World War II veteran.

Dr. Douglas K. Packard, 63, Dubuque, died July 19 as a result of an auto accident near Savanna, Illinois. Dr. Packard received the M.D. degree at Northwestern University Medical School in Chicago and had a surgery residency at the University of Illinois Research and Education Hospital. A general surgeon with Medical Associates for 30 years, Dr. Packard was a fellow of the American College of Surgeons; a diplomat of the American Board of Surgery; member of the Warren Cole Society of the University of Illinois, member and past president of the Iowa Academy of Surgeons and a Burlington-Northwestern Railroad Surgeon.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Soft Sell In Hard Times

NOT THAT long ago, it was unheard of and considered inappropriate; today it is happening on television and radio, in newspapers and magazines, through the mail and even on colorful billboards looming above city streets. It's happening in Des Moines, Sioux City, Cedar Rapids and elsewhere in the state. Iowa's hospitals — particularly those in urban settings — are moving full tilt into the traditionally taboo arena of advertising/marketing.

Interviews with public relations directors at several urban Iowa hospitals reveal a marked increase in both the amount and diversity of hospital marketing this past year. This stepped-up activity, they stress, is a direct and necessary response to today's competitive and chameleon-like health care environment.

"With the increased emphasis on market forces, hospitals must try harder to make a distinct impression on consumers," says an Iowa Hospital Association spokesman. "The amount of advertising is directly proportional to the size and rurality of the hospital."

In the midst of pressure from insurers and with governmentally-imposed inpatient cost containment measures intensifying, hospital census counts have dropped and consumer awareness of choices has risen, say those interviewed. As a result, Iowa hospitals seemingly have turned to soft sell as a survival tool in hard times.

"In 'top-of-mind' awareness, advertising does make a difference," comments one hospital public relations director. "We have to keep our name out there, be tasteful about it and still stay in tune with the times."

Whether the hospital is small or large, name recognition is cited regularly as the fundamental goal of the advertising campaign.

The hospital administrators obviously and wisely want to get the best return on their advertising investment; therefore they typically conduct periodic consumer surveys to analyze the penetration and message acceptance.

In addition to the previously mentioned factors, the changing role of physicians has been an impetus for increased hospital advertising. One Des Moines hospital spokesman put it this way: "If a hospital has a loyal staff of physicians with considerable influence over their patients, they probably won't have to advertise. But we're finding more and more that patients have no particular allegiance to any one doctor."

"Physician recommendations are still the key to 50% of our business, but we're seeing more doctors on staff at several hospitals and this creates a greater need for advertising," is the comment of another hospital staffer.

Because hospitals are fledglings in the marketing game, it may be too early to tell what affect their advertising is having on consumers. The Iowa Hospital Association is itself in the midst of a "Quality and Access" educational advertising campaign. It currently has no system of monitoring hospital advertising. But IHA spokesmen say that except for a few consumers and staff members who believe hospitals "should be above this sort of thing," reaction has been very good.

One Iowa hospital public relations director sums it up this way: "There are a lot of people new to hospitals and the medical industry who feel strongly that there is a need for marketing. There are also some who have been there for a long time who are bothered by it. But they are realizing that this is one aspect of a competitive environment."

September 1985

Iowa Medicine

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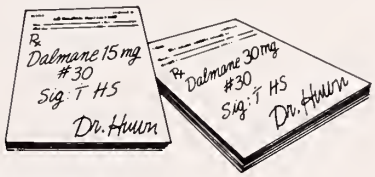
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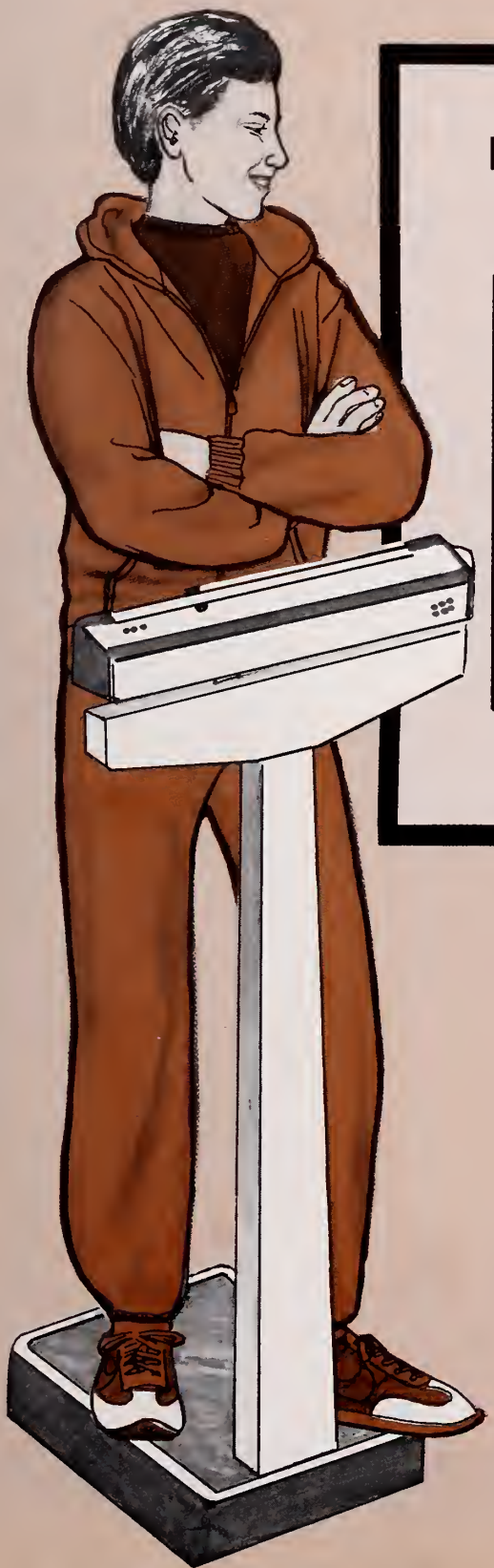


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IowaMedicine

October 1985 Journal of the Iowa Medical Society



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October 1985

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Volume 75 Number 10

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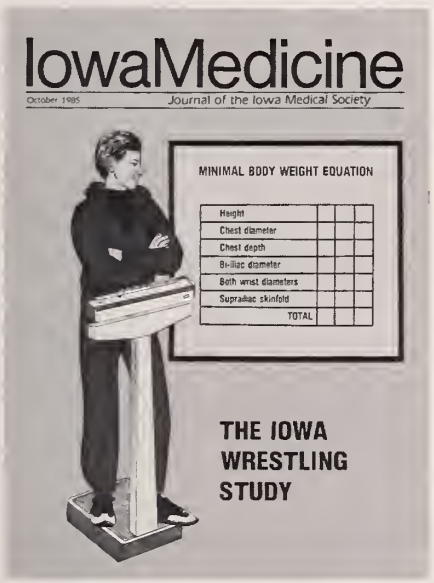
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ABOUT THE COVER



ABOUT THE COVER — For many years the issue of determining the proper competitive weight for Iowa high school wrestlers has been before us. In this time the Iowa Medical Society has supported research directed at finding a scientifically valid way to identify a youngster's most appropriate weight. Now say the researchers such an equation is available. They indicate it is up to the powers that be to determine if and how it will be used. See page 449 for information about the equation.

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IOWA MEDICINE is owned and published monthly by the IOWA MEDICAL SOCIETY. It contains material of scientific and socioeconomic interest mainly to Iowa physicians. The IOWA MEDICAL SOCIETY has 3,000 member physicians in 92 county medical societies. The IMS Headquarters is at 1001 Grand Avenue, West Des Moines, Iowa 50265.

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MERCY HOSPITAL MEDICAL CENTER
DES MOINES, IOWA
PRESENTS

UPDATE ON EMERGENCY MEDICINE

NOVEMBER 13, 1985

GUEST FACULTY	TOPICS
TOM FINLEY, J.D. ATTORNEY AT LAW DES MOINES, IOWA	**"MALPRACTICE: PREVENTIVE MEDICINE"**
CARL GAINOR, PH.D., J.D. CL. ASSISTANT PROFESSOR OF PHARMACY UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE PITTSBURGH, PENNSYLVANIA	**"DRUG SELECTION AND LIABILITY"**
BEVERLEY MEAD, M.D. ASSOCIATE DEAN FOR ACADEMIC AFFAIRS PROFESSOR OF PSYCHIATRY CREIGHTON UNIVERSITY OMAHA, NEBRASKA	**"PSYCHOLOGICAL EMERGENCIES"**
PETER MUCHA, M.D. ASSOCIATE PROFESSOR OF SURGERY MAYO MEDICAL SCHOOL ROCHESTER, MINNESOTA	**"EMERGENCY THORACIC PROCEDURES"**
EDWARD G. LUFKIN, M.D. ASSOCIATE PROFESSOR OF INTERNAL MEDICINE MAYO MEDICAL SCHOOL ROCHESTER, MINNESOTA	**"NON-DIABETIC ENDOCRINE EMERGENCIES"**
ED WEGRZYNOWICZ, M.D. ASSISTANT PROFESSOR DEPARTMENT OF ANESTHESIA UNIVERSITY OF IOWA IOWA CITY, IOWA	**"REGIONAL ANESTHESIA IN THE EMERGENCY ROOM"**

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PRESIDENT'S PRIVILEGE

DECIDE LIABILITY PLANS AT SPECIAL SESSION

DEVELOPMENTS on the medical liability front continue apace. Thus, I continue to discuss that subject.

This is written the day after our September 12 meeting of the Iowa Medical Society Executive Council. Nearly 30 physicians were present September 12 on behalf of member colleagues. They okayed (by unanimous vote) the following resolutions:

Resolved, That the Executive Council endorses the report of the Task Force on Medical Liability, and be it further

Resolved, That the House of Delegates be called into special session for the purpose of addressing the medical liability issue in Iowa, and be it further

Resolved, That the Executive Council urges the House of Delegates to authorize implementation of the comprehensive program set forth in the task force report to the extent possible with implementation to begin immediately, and be it finally,

Resolved, That the House of Delegates set and approve a specific financial strategy to implement the comprehensive program, including a special dues assessment.

So, a special session of the 240-plus physician IMS House of Delegates is set for Sunday, October 13. Special sessions are rare; they are held only to deal with extremely urgent and major issues.

As you read this, the House is either just ready to meet or has just met. The delegates are being asked to support, reject or modify an action plan prepared by the Task Force on Medical Liability and endorsed by the Executive Council. It is as ambitious as any IMS project for many years. The goal is to impact on 3 elements of the liability equation: *claim frequency, severity of awards* and *premium determination.*

The Executive Council agreed to a person that our goals will be achieved only by our total dedication. It'll take personal and financial participation by all of us.

Emmett B. Mathiasen M.D.

Emmett B. Mathiasen, M.D.
President

MERCY HOSPITAL MEDICAL CENTER
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PRESENTS

UPDATE ON APNEA IN INFANTS AND CHILDREN

OCTOBER 30, 1985

GUEST FACULTY

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MAYO CLINIC
ROCHESTER, MINNESOTA

WILLIAM ORR, PH.D.
DIRECTOR, DEPARTMENT OF CLINICAL PHYSIOLOGY AND SLEEP DISORDERS CENTER
PRESBYTERIAN HOSPITAL
OKLAHOMA CITY, OKLAHOMA

TOPICS

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"CURRENT MANAGEMENT OF INFANT APNEA"

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"SLEEP DISORDERS IN THE PEDIATRIC POPULATION"

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Ethiopia: Famine and Frustration

WILLIAM C. ROSENFELD, M.D.
Mason City, Iowa

An estimated 7 million Ethiopians — victims of drought and a callous, incompetent government — are being ravaged by starvation and famine-related diseases. An Iowa physician who recently spent three months in Ethiopia tells of his experiences in a "feeding center" — a lifeline for thousands of people. He gives an insight as to how this unspeakable tragedy evolved.

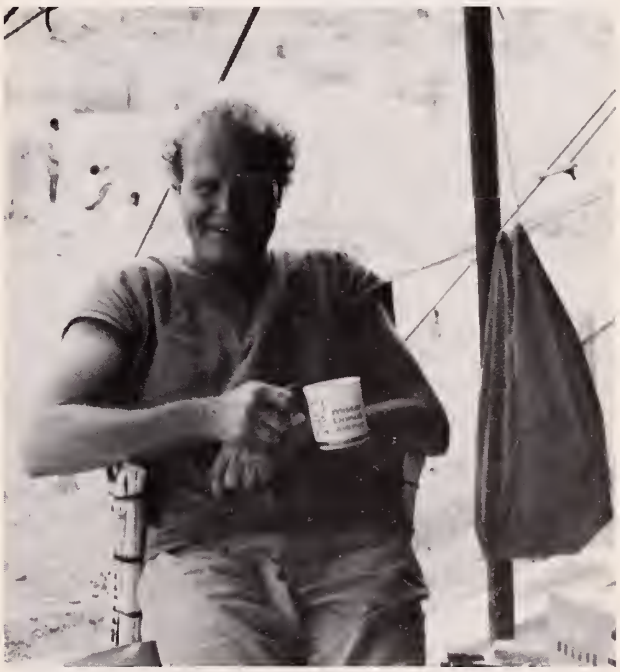
MAMUSH WAS 4 YEARS OLD WHEN HE REACHED our feeding station at Gehowa; he weighed only 15 pounds. His skin was leathery and stretched tautly around his bones. His eyes peered blankly out of a misshapen head with what we called a "million mile stare." His mother was blinded by trachoma.

I remember Mamush, hardly able to walk, leading his mother down to our bamboo building. It was our intensive feeding center and a place where he, his mother and later an uncle would sit on the floor while we tried to save him. He was so weak he would not eat and had to be fed through a tube. He had severe diarrhea and vomiting. Repeated intravenous fluids were required to fight the dehydration.

Mamush fought gallantly. His mother and uncle crooned to him day and night, tending to his needs and doing what they could. Occasionally we would get a weak smile out of him, but generally it was the bleating cry that we heard over and over again each day. Mamush fought, his mother and uncle hoped, and we did the best we could; but after 3 weeks, Mamush died. I will never forget the anguish of his mother as she cried, "I want to die too, he was my eyes, he was all I had."

A Lost Generation

Thus it went day after day, week after week, month after month as thousands of people



William C. Rosenfeld, M.D., practices internal medicine in Mason City. He is speaker of the House of Delegates for the Iowa Medical Society. In addition to his recent service to Ethiopia, Dr. Rosenfeld has been to Thailand twice to care for refugees near the Cambodian border.



walked to our feeding center in northern Shoa Providence. Starving and without clothing, many were acutely ill with diseases that attack the weak and malnourished.

Starvation is ravaging the children in Ethiopia and across the sub-Saharan drought belt. Three-quarters of those who die are under age 5. Many of the tiny, shriveled survivors will be blighted for life. Hunger causes cruel and lasting damage. Bones become brittle and warped, growth is inhibited, eyes are blinded and life expectancy drops to 19th century levels. Lethal diseases spring from the famine and the filth that goes with it: diarrhea, measles, whooping cough, tuberculosis, diphtheria and cholera.

Among the youngest children, brain growth is retarded by malnutrition, and with the lack of treatment in sun-struck Africa, most of the victims will never catch up. It is possible an entire generation will be permanently scarred. Says a UNESCO nutritionist, "The famine has stunted the physical growth and intellectual development of an entire population — this is a lost generation."



Photo to left — Main storage and eating tent.

Blindness Is Prevalent

For children born and raised in the teeth of famine, blindness is one of the severe consequences. Lack of Vitamin A leads to xerophthalmia. It was so sad, so hard to see these children blinded by simple lack of Vitamin A. I estimate that 10-15% of the children we saw had evidence of Vitamin A deficiency in their eyes.

I was in Ethiopia from mid-March to mid-June. Because of my involvement with the *Iowa Cares Medical Project*, I was contacted by Church World Service (CWS), which had been trying for several months to recruit a physician for the Gehowa feeding station. I went to Ethiopia under CWS auspices. The CWS team was secunded to the Christian Relief and Development Association (CRDA) in Addis Ababa.

CRDA is an Ethiopian organization formed by a group of Christian churches 15 years ago. It was nonfunctional until the famine struck, but is now one of the major relief conduits for famine victims. It has an Ethiopian board of directors and is staffed entirely by Ethiopians except for its head, Brother Augustine O'Keefe. O'Keefe is an Irish Catholic lay brother who has been in Ethiopia for 14 years. He does a good job but is constantly frustrated by the idiosyncrasies, bureaucracy and fickleness of the Marxist, military dictatorship governing Ethiopia.

Our feeding station was located 250 kilometers north of Addis Ababa, a 5-hour drive on treacherous roads through rugged mountain terrain. Despite tremendous obstacles, the feeding station was established in early January by 3 nurses from Church World Service. We had no permanent structures for people to live in, only our intensive feeding center where we cared for 80 to 120 severely malnourished children on a 24-hour basis. Daily, some 35,000 people walked as far as 25 to 30 kilometers through rugged terrain to reach the center.

On a regular basis, each Kabele or group of villages would come to have their children assessed. The children were weighed, measured and rated on a percentage of weight for height. Children who were 80% or less of normal weight were put on the supplemental feeding program and given a ration to take home. Those less than 70% of normal weight were put in the intensive feeding center. Many were 50% or less. Those over 70% were given supplemental rations, usually every 2 weeks.

Ideally, the ration was Fafa, a high protein mixture of corn, soy and pea flour mixed with oil and sugar. Unfortunately, our Fafa supplies were scanty and frequently we had to give out plain wheat flour, sorghum, skim milk, premix, high-protein biscuits or whatever we had. The people would sit patiently in the blazing sun waiting to be assessed and receive their ration. Those in the intensive feeding center were fed 6 times a day, including 2 feedings of





Photo to right — Mamush and mother.

Fafa made into a porridge-like paste. All children who passed through the feeding center were given vitamins, especially Vitamin A.

Medical care was nonexistent, although the Ethiopian government insists there is no problem other than famine. After I arrived, we opened a clinic to care for the sick children and adults who were able to get there. The children were carried by their parents; adults were carried by family members on crude benches. Since we were not a hospital facility, the adults were treated during the day with intravenous fluids and had to return home at night. We do not know how many died. We do know that many died because they could not make the journey to our clinic.

(Please turn to page 442)





By the end of my 3-month stay, I was seeing 120 to 170 people a day in the clinic in addition to taking care of sick children in the intensive feeding center. It was hard work physically and emotionally. We lived in tents and had no electricity or running water. It was hot and dirty. The 5 nurses I worked with were dedicated, competent and had a singleness of purpose that was truly amazing.

Death was a daily occurrence. Every week, 5 to 10 children died in the intensive feeding center. We do not know how many more died at home since we had no records and no way to gather statistics. A preponderance of the children brought to the center were male. Males take precedence because it is believed they will perpetuate the family, although the women and girls do most of the menial labor. We suspected many of the starving females were left home to die.

The Politics of Starvation

Rising above Addis Ababa's Revolution Square is an outsized bronze statue of Lenin. Across the square, a portrait of Marx, Trosky and Lenin, flooded at night, dominates the vista. Everywhere around the city, the symbols of the Ethiopian revolution can be seen. In the countryside, at our feeding stations, there are no statues or portraits — only despair.

Since the world woke up to the famine, or when the government allowed the world to realize what was happening, 500,000 metric tons of wheat, corn, rice, powdered milk and other foods have been distributed at 210 dust-shrouded feeding stations. The vast majority of this aid has come from the United States and Western Europe. So far, the United States has given over a billion dollars in aid.

To get a subsistence level of food to a portion of the estimated 7 million Ethiopians who have little or nothing to eat, rescue workers contend with inadequate port facilities, too few trucks, bad roads, greedy bureaucrats, and a government which appears not to care. Indeed, Chairman Mengistu has stated that economic and agricultural matters are of secondary importance because "the sole basis of our revolutionary struggle is the ideology and politics we follow."

Crippling Marxist Ideology

Despite the huge relief effort, the specter of death looms over the dusty villages, forlorn farms and partially denuded forests of this ancient land. It is a specter born partially of drought but nurtured to monstrous size by a Marxist ideology that has crippled Ethiopian agriculture.

Food Production Declining

Since taking power with a machine gun blood bath in 1977 and 1978, Mengistu has infected Ethiopia with the same virulent strain of socialist "planning" that plagues much of Africa. In 1962, the continent fed itself; but over the next 20 years, as proliferating Marxist regimes imposed "scientific socialism" on agriculture, Africa gained the grotesque distinction of being the only region on earth where

per capita food production consistently declined. Today, although it has only 15% of the underdeveloped world's population, Africa receives 60% of world food aid.

Ethiopia stands as a notable example of Africa's plummeting food production, a circumstance due primarily to political factors which exploit farmers. To be sure, drought has affected much of East Africa for the past 3 years. But the drought evolved into agonizing famine only when combined with the doctrines and incompetence of Ethiopia's Marxist rulers.

Before the revolution under the last emperor, Haile Selassie, Ethiopian agriculture was emerging from a heritage of primitive technology and poor marketing. Food production grew at an annual rate of about 3%, keeping pace with population growth. Since the revolution, all land has been nationalized. Production has fallen and the state farms have proven woefully inefficient.

An Uncaring Government

Chairman Mengistu has shown little embarrassment or remorse for the starvation in his country. He has withheld relief food from areas partially controlled by rebel factions. Some towns housing government troops have received huge supplies of food, with the surplus sold across the border in Sudan.

At the height of the famine in September 1984, Mengistu spent more than 100 million dollars for monuments, bands and parade floats to celebrate the 10th anniversary of the Ethiopian revolution. While babies died at the breasts of starving mothers, an Ethiopian ship carrying more than a 100 dollars worth of British liquor was unloaded and its cargo rushed to Addis Ababa. An American ship carrying relief grain had to wait behind a Soviet ship unloading cement for military barracks.

In the eyes of the world, the starving Ethiopians are the victims of famine. In reality, they are more the victims of a plague — an ideologic plague summed up in Mengistu's 10th anniversary cry, "Ethiopian revolution or death!"[2]

The government has destroyed the traditional methods of farming. The peasants have lost all incentive to produce food and are becoming more and more dependent on relief food. They have no donkeys, oxen or seeds.

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Farmers have two choices: starvation at home or the desperate and often fatal effort to reach food distribution centers.

A Dependence Scenario Emerging

Unless something is done, the survivors of the drought will become permanently dependent on a continuing flow of food from the United States and other countries. An end to dependence requires that farming centers in Ethiopia be helped to rebuild the social and economic structures to allow Ethiopians to feed themselves.

To achieve this goal, America and other countries giving aid must insist on 3 things:

(1) That aid be distributed to all suffering regions of the country,

(2) That Ethiopia use its own resources for food and development rather than maintain a huge army that absorbs nearly half of the national budget, and

(3) That the government allow people a voice in the decisions that shape their lives.

However callous the current regime, it is justifiably afraid that its control is growing weaker as the suffering spreads. Lacking an alternative source of food, the regime is less able to resist demands that accompany offers of lifesaving aid — particularly if those demands are compassionate and realistic. Once the door is opened, it may prove impossible to slam it shut again. I see no other hope for a self-reliant Ethiopia. The problems facing the country will still be enormous even if the brutal system is forced to change. If the present regime goes unchallenged, I see no hope at all.

Did I Do Any Good?

I am frequently asked, "Did you do any good?" and "Would you go back?" Yes, I think we did some good. There are many children and adults who survived because of our presence. You cannot think about the fact that you are only scratching the surface, that there are literally millions of sick and starving Ethiopians. You have to concentrate on those who are in front of you and do the best you can. I would do it again. Just to see a starving child come back to life and smile makes it worthwhile.

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Carol A. Aschenbrener, M.D.

QUESTIONS AND ANSWERS



WOMEN IN ORGANIZED MEDICINE

Dr. Aschenbrener is associate dean of student affairs and curriculum at The University of Iowa College of Medicine. A pathologist, Dr. Aschenbrener is vice president of the Iowa Medical Society and chairman of the IMS Committee on Women Physicians in Organized Medicine. Dr. Aschenbrener comments here on efforts to increase the involvement of women physicians in organized medicine.

When and why was the IMS Ad Hoc Committee on Women Physicians in Organized Medicine formed?

The Committee was formed in January to encourage greater participation by women physicians in IMS activities and to stimulate more women physicians to assume leadership in organized medicine. There are 212 practicing women physicians in Iowa, 157 belong to the IMS. There are also 26 resident and 38 student women members. However, the number of women members in leadership positions is low. Though all IMS committees include at least one woman, we hope more women will want to serve on such committees and seek office in county and state societies.

Recently your Committee surveyed women physicians in Iowa about their involvement in organized medicine. What reasons did respondents give for participation or nonparticipation?

Women are no different from men in the reasons they give for IMS membership: contact with professional peers, professional unity, keeping informed on legislative and socioeconomic issues and member benefits.

The common reasons given for not participating were time constraints and conflicting family responsibilities. Others indicated disinterest, lack of information and discomfort in male groups. Finally, some said their participation is hindered by lack of information about how to get involved or lack of confidence in their leadership skills.

What issues and career programs hold the greatest interest for women physicians in Iowa?

Respondents expressed interest in programs that address practice management issues, leadership and communication skills and strategies for career/family management. While practice management workshops might be expected to be gender-free, women sometimes believe legal and financial discussions are pitched primarily for a male audience. Their perception that men have greater familiarity with and understanding of business matters seems to create an uneasiness that hinders participation.

Many women were particularly interested in discussing career/family management strategies with others seeking to combine the roles of physician, wife and mother. Establishment of a "network" among women physicians in Iowa might be the most effective way of addressing that need.

Based on the survey, was the committee able to draw other conclusions about the current status of women in organized medicine?

Of the 61 survey respondents, 59 are IMS members and 56 are county society members.

(Please turn to page 446)

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Seven women have been county society presidents and 7 are current county delegates to the IMS. Four hold office in other specialty societies. Only 4 respondents assessed their level of activity in state and county societies as *high;* 19 reported they would like to increase their participation.

The fact that half the respondents received their medical degrees after 1975 suggests there may be many women who have been in practice less than 10 years who might be encouraged to greater participation in the IMS, particularly if programs are developed or expanded to address concerns of those with young children. Also, comments of respondents suggest low familiarity with the aims and activities of the IMS.

Please tell us about the upcoming IMS conference for women physicians planned by your committee.

The Ad Hoc Committee on Women Physicians in Organized Medicine will sponsor a daylong workshop at IMS headquarters on Wednesday, October 16. Speakers will discuss the IMS structure and opportunities for participation. Updates will be provided on medical liability, legislative priorities and physician supply. Linda Warren, M.D., a member of the AMA Advisory Panel on Women in Medicine, will address leadership issues relevant to women. An interactive training session will focus on communication skills for large and small group settings. There will be ample opportunity for participants to become acquainted and to share ideas, concerns and solutions.

How does your Committee plan to further facilitate increased involvement of women physicians in organized medicine?

Visibility in leadership positions is essential if more women are to become involved in organized medicine. Women physicians are more likely to speak out and seek office if such activity does not commit them to being a trailblazer or a token representative.

The growing support by men in the IMS is also a critical stimulant to greater involvement by women. Some may scoff at the notion that a 1980's woman might be uncomfortable as the standout in an otherwise male group, but societal messages that authority, money and leadership are male arenas are still strong.

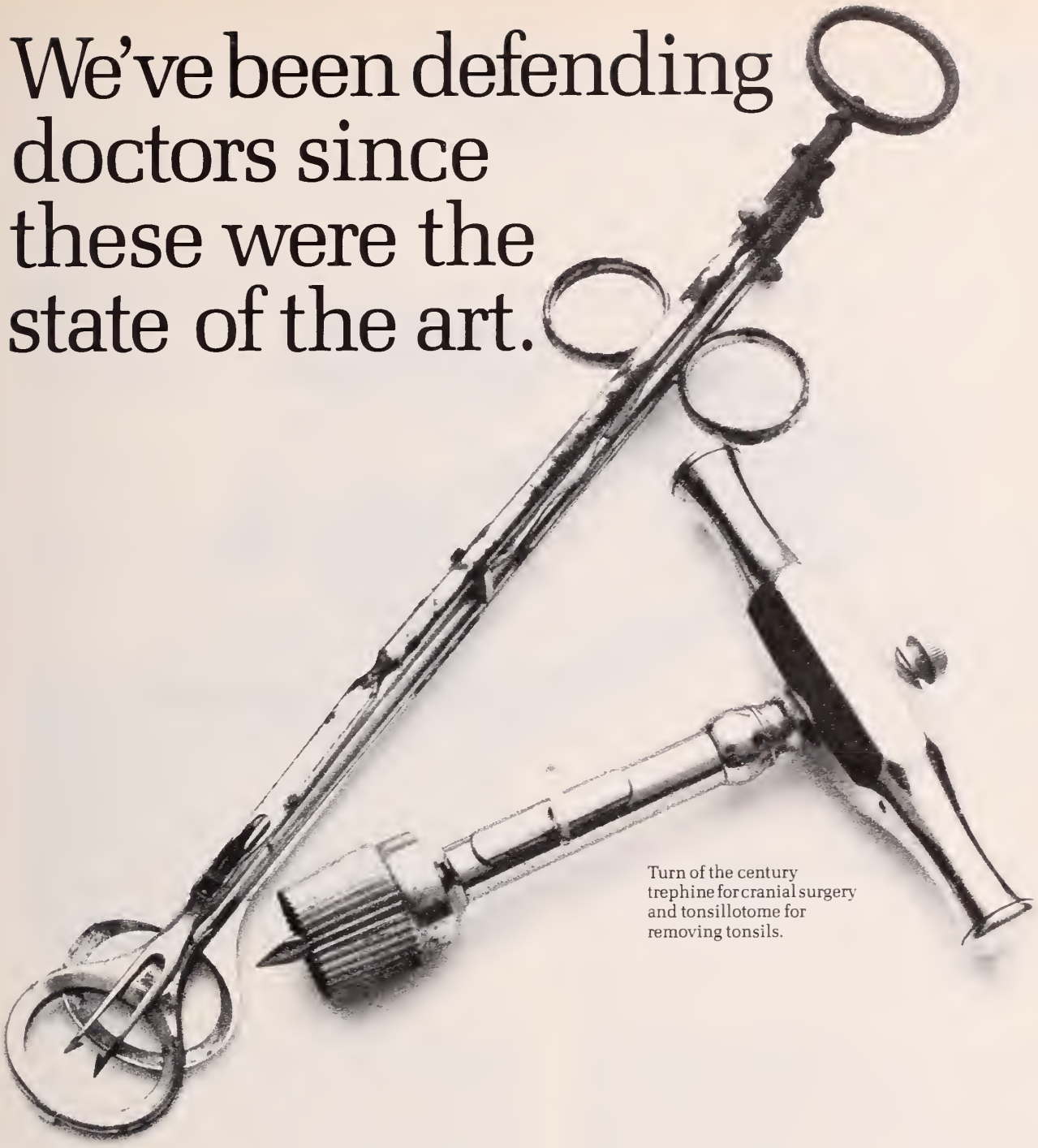
The Committee hopes to sponsor additional workshops that address issues of concern to both women and men, to facilitate networking and to urge interested women to greater visibility in the IMS.

How do you feel about being the first woman physician to hold a major office in the Iowa Medical Society?

I am delighted to have the opportunity to interact with IMS members and have a voice in the affairs of the Society. The encouragement and welcoming response of my male colleagues has been gratifying and has kept me from feeling the onus associated with being a "first."

My IMS involvement has expanded my perception of the commonality of purpose of Iowa physicians. It has strengthened my conviction that professional unity which nourishes individual diversity is critical to maintain the vitality and autonomy of our profession.

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PEOPLES DRUG

Report Important Research Conclusions On 'Weighty' Issue of Iowa Prep Wrestling

Weight Prediction Equation Tested and Available

ROBERT A. OPPLIGER, Ph.D., and
CHARLES M. TIPTON, Ph.D.

Potential risks of "weight cutting" warrants a new approach to deciding the weight class of the Iowa prep wrestler. A new minimal weight prediction formula has been validated after much research. The authors urge its use in Iowa based on the studies supported in part by the Iowa Medical Society.

SINCE 1968, physiologists at The University of Iowa have conducted investigations on the biological consequences of the "making of weight" by scholastic and collegiate wrestlers.[10] This is a universal practice in Iowa and elsewhere and has concerned clinicians, scientists, educators and coaches ever since weight classes were established.[8]

The Iowa Wrestling Studies[7-10, 12, 13] have served as an impetus for the American College of Sports Medicine,[1] the American Medical Association,[2] and several state athletic associations;[11] (R. W. Smith, personal communication from California) to develop guidelines and position stands on ways to minimize the anatomical, biochemical, physiological and psychological problems created by the repetitive weight reduction process. One such recommendation is to predict a minimal wrestling body weight before the competitive season begins.[1, 2, 7, 8] By definition,[7, 8] this minimal body weight is one that contains 5% fat.

Using anthropometric measurements from more than 1,400 Iowa wrestlers, Tipton *et al* have developed and used 2 different anthropometric equations to predict a minimal wrestling weight.[7, 8] However, these equations were never validated using an accepted scientific method to assess body composition, such as hydrostatic weighings.[3]

With financial support and encouragement from the Iowa Medical Society (particularly its Committee on Sports Medicine), the Iowa Medical Foundation, the Iowa High School Athletic Association, the Research Committee of the National Collegiate Athletic Association, and the University of Iowa, we initiated a series of investigations to determine the validity of these two prediction equations, and to develop a single prediction equation. Inherent within these studies was the goal of finding a way to implement the prediction equation approach at the local, state or national levels.

Dr. Oppliger is associated with the College of Nursing and the Department of Exercise Science and Physical Education, The University of Iowa. Dr. Tipton is associated with the Department of Exercise and Sports Science, University of Arizona.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF OCTOBER 1985

TABLE I

PERCENT BODY FAT ON HIGH SCHOOL WRESTLING STATE FINALISTS

	Fat Percentage	*N*	*Mean Body Weight (Lbs.)*
	< 3%	10	129.5 ± 23.4
	3-5%	6	131.4 ± 15.6
	5-7%	9	133.9 ± 21.1
	7-10%	7	135.8 ± 29.7
	> 10%	15	128.8 ± 21.7
Group Mean	7.3 ± 4.4%	47	131.3 ± 21.8

All results were obtained from hydrostotic weighings and the use of the Brozek equation for determining body fat.[3]

TABLE II

MINIMAL BODY WEIGHT (LBS.) PREDICTED BY HYDROSTATIC WEIGHING, THE SKELETAL DIMENSION PREDICTION METHOD, AND THE SKINFOLD PREDICTION METHOD

Actual Weight	*N*	*Minimal Weight by Hydrostatic Weighings*	*Minimal Weight by Skeletal Dimensions*	*Minimal Weight by Skinfold Measurements*
≤ 110	18	98.4 ± 6.4	101.2 ± 10.1	101.2 ± 3.5
111-120	30	111.0 ± 4.8	112.2 ± 7.1	112.3 ± 3.0
121-130	23	118.5 ± 6.6	121.3 ± 5.9	121.4 ± 3.0
131-140	30	130.0 ± 5.4	128.3 ± 8.8	130.3 ± 3.5
141-150	34	138.1 ± 7.3	137.8 ± 6.0	138.6 ± 3.5
151-160	20	147.2 ± 6.6	146.0 ± 6.5	147.0 ± 3.9
161-170	22	157.1 ± 7.0	153.8 ± 8.2	155.5 ± 4.8
171-180	15	161.9 ± 8.7	158.8 ± 8.2	164.4 ± 5.1
181-190	8	165.5 ± 13.8	163.7 ± 8.4	167.2 ± 8.6
191-225	6	175.7 ± 13.0	175.3 ± 6.7	178.9 ± 9.1
Grand Totals	206	134.1 ± 22.2	133.8 ± 20.7	135.2 ± 20.9

Weight is in pounds; values are expressed as means and standard deviations. A minimal body weight is defined to have five percent fat.

TABLE III

CORRELATION COEFFICIENT COMPARISON BETWEEN MINIMAL BODY WEIGHTS DETERMINED BY HYDROSTATIC WEIGHING AND BY THE TWO ANTHROPOMETRIC METHODS

Comparison	*Skeletal Dimensions*	*Skinfolds*
STATE FINALISTS (N = 47)		
Hydrostatic Weighings	0.94	0.97
Skeletal Dimensions	—	0.95
NON-STATE FINALISTS (N = 159)		
Hydrostatic Weighings	0.93	0.98
Skeletal Dimensions	—	0.95
COMBINED WRESTLING POPULATION (N = 206)		
Hydrostatic Weighings	0.93	0.97
Skeletal Dimensions	—	0.94

Methods

The procedures followed to predict a minimal wrestling weight from skeletal dimensions have been described in detail elsewhere.[7, 8] Using anthropometric calipers made at The University of Iowa 7 skeletal dimensions (height, chest diameter, chest depth, bi-iliac diameter, bitrochanteric diameter, wrist diameter, and ankle diameter) were measured and used in a regression equation to predict a body weight considered to be minimal (i.e. with 5% fat). The reference population used to develop the prediction equation was 582 Iowa State finalists measured between 1968 and 1971.[7] Using the data supplied by Wilmore (personal communication), a skinfold prediction equation was developed for use with Iowa wrestlers.[8] The 6 skinfold sites used for this purpose were the chest, triceps, subscapula, suprailiac, abdomen, and thigh. Measurements were made with a Harpenden skinfold caliper.

Results

Summarized in Table I are the body fat percentages of 47 finalists at the 1983, 1984 and 1985 IHSAA-sponsored wrestling championships who volunteered to be measured. Of this population, approximately 33% had a fat percentage less than the recommended minimal value of 5%. The mean body fat on all finalists was 7.3% ± 4.4%.

In Table II are the results from 206 subjects including the 47 finalists, whose body dimensions, skinfolds, and underwater weights were measured and used with the respective equations to predict a minimal body weight. Based on their weight at the time of testing, the subjects were divided into 10-pound weight intervals to facilitate the data analysis. When the 3 methods were compared, there were no differences greater than 5.6 lbs (161-170 weight class) and the majority of comparisons were less than 3 pounds. When compared to the hydrostatic weighing minimal weight, the prediction equations showed no difference greater than 3.3 lbs (161-170), which is less than a 3% difference. For the entire sample the mean differences between the 3 approaches was less than 1.4 lbs (hydrostatic weighing = 134.1 lbs; skeletal dimensions = 133.8 lbs; skinfolds = 135.2 lbs).

Comparisons of the correlation coefficients (r) in Table III demonstrated that the 2 existing

TABLE IV

THE 1985 MINIMAL BODY WEIGHT PREDICTION EQUATION FOR IOWA SCHOLASTIC WRESTLERS

Height	(inches)	× 1.672	= ____.
			+
Chest Diameter	(cms)	× 3.809	= ____.
			+
Chest Depth	(cms)	× 4.109	= ____.
			+
Bi-illiac Diameter	(cms)	× 1.966	= ____.
			+
Both wrist diameters	(mm)	× 5.243	= ____.
			−
Suprailiac skinfold	(mm)	× 0.248	= ____.
TOTAL			= ____.
Regression constant			− 263.824
Minimal Weight (lbs)			= ____.

R = 0.934

SE Estimate = 8.2 lbs.

anthropometric equations were significantly correlated with the body weight values obtained by underwater weighing. Of the 2 approaches, the skinfold equation had consistently higher correlation coefficient values.

Included in Table IV are the results when a single prediction equation was developed using hydrostatic weighing as the criterion measure. This equation is similar to the previously developed equation using skeletal dimensions. The correlation (.93) with hydrostatic weighing and the standard error of estimate (8.2 lbs) are also similar.

The comparison between the subjects used in 1968-71 and those in 1983-85 is summarized in Tables V and VI. When the state finalists are contrasted, the 1983-85 sample is younger, lighter in body weight, has smaller skeletal dimensions and a lower sum of skinfolds. On the other hand, the non-finalists from the different decades were remarkedly similar in stature, weight, and body dimensions even though the more recent subjects were older and had a lower sum of skinfolds.

Discussion

There are 3 important findings from these studies:

(1) **A large number of high school wrestling finalists are competing at body weights with less than the recommended percentage of body fat.** Since the finalists measured were volunteers, it is unknown whether the actual percentage of the wrestlers having less than

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TABLE V

COMPARISON OF SKELETAL DIMENSIONS AND SKINFOLDS FOR STATE FINALISTS MEASURED IN 1968-71 AND 1983-85

	1968-1971 Subjects (N = 582)			*1983-1985 Subjects (N = 47)*		
Parameter	$\bar{X}$	*SD*	*SE*	$\bar{X}$	*SD*	*SE*
SKELETAL DIMENSIONS						
Age (yeors)	17.8	0.94	.04	16.8	0.99	1.15
Weight (lbs.)	142.5	29.30	1.21	131.3	21.80	3.18
Height (inches)	67.6	2.99	.12	66.7	2.58	.38
Chest Diameter (cm)	27.7	2.17	.09	26.4	1.77	.26
Chest Depth (cm)	19.2	2.19	.09	17.9	1.43	.21
Bi-ilioc Diameter (cm)	27.0	2.19	.09	26.5	1.69	.25
Bitrachanteric Diameter (cm)	31.1	2.18	.09	30.1	1.67	.24
Diameter af Both Ankles (cm)	14.0	0.96	.04	13.8	.31	.05
Diameter of Both Wrists (cm)	11.2	0.78	.03	10.6	.33	.05
SKINFOLDS						
Triceps (mm)	7.7	2.24	.09	6.7	1.75	.26
Chest (mm)	4.5	1.87	.09	5.1	1.12	.19
Subscopulo (mm)	6.4	2.57	.11	6.8	1.64	.24
Suproilioc (mm)	9.1	5.42	.22	6.9	2.27	.33
Abdominol (mm)	8.6	5.73	.24	7.1	2.09	.31
Thigh (mm)	7.7	2.76	.11	7.6	1.84	.27
Sum af Skinfolds (mm)	44.0	18.48	.77	39.1	8.47	1.45

TABLE VI

COMPARISON OF SKELETAL DIMENSIONS AND SKINFOLDS FOR NON-FINALISTS MEASURED IN 1968-71 AND 1983-85

	1968-1971 Subjects (N = 834)			*1983-1985 Subjects (N = 159)*		
Parameter	$\bar{X}$	*SD*	*SE*	$\bar{X}$	*SD*	*SE*
SKELETAL DIMENSIONS						
Age (yeors)	15.9	1.10	.09	16.5	0.99	.08
Weight (lbs.)	142.4	28.10	.97	145.3	24.00	1.90
Height (inches)	67.4	3.01	.10	67.6	2.73	.22
Chest Diameter (cm)	26.8	2.26	.08	26.9	1.88	.15
Chest Depth (cm)	19.1	2.17	.08	18.9	1.82	.14
Bi-iliac Diameter (cm)	26.8	2.10	.07	27.0	1.70	.14
Bitrachanteric Diameter (cm)	31.0	2.21	.08	30.8	1.76	.14
Diameter af Both Ankles (cm)	14.3	0.85	.03	13.9	.42	.04
Diameter of Both Wrists (cm)	11.0	0.70	.02	10.7	.34	.03
SKINFOLDS						
Triceps (mm)	9.1	4.48	.15	8.6	2.78	.22
Chest (mm)	6.6	4.43	.15	5.9	2.44	.22
Subscapulo (mm)	8.9	4.49	.16	8.6	3.25	.26
Suprailioc (mm)	14.4	9.5	.33	11.8	6.16	.49
Abdominol (mm)	14.4	9.5	.33	11.0	5.13	.41
Thigh (mm)	11.6	5.88	.20	10.0	3.08	.25
Sum of Skinfolds (mm)	65.1	34.36	1.18	56.1	18.77	1.63

5% body fat is higher or lower than the 33% noted in Table I.

(2) **The two minimal weight prediction equations tested among Iowa scholastic wrestlers are valid.** The prediction of body weight from anthropometric measurements is a method that has been used with Illinois and Iowa students for almost 50 years.[4, 5] However, as noted more than a decade ago with the Hall method,[19] the equation must be validated using a reference population similar to one for which the equation is intended (in this case, interscholastic wrestlers). The high correlation coefficients with the criterion measure (Table III) and the similarity of the current results with previous data (Tables V and VI) support our second major finding.

(3) **A single anthropometric equation (Table IV) was developed that is valid for Iowa scholastic wrestlers.** It is practical, allows for the assessment of growth changes, and is suitable for implementation purposes. Of the skinfold sites, the suprailiac skinfold site is more sensitive in "tracking" changes in body weight than any of the other 5 measurements.[7] This finding, plus the fact that skinfold measurements cannot assess changes in stature or dimension, prompted selection of a single equation that contained skeletal and skinfold measurements. To also consider body fatness, this formula could be used in conjunction with the skinfold prediction equation developed previously. The minimal wrestling weight determined using both formulas would include a comprehensive assessment of skeletal growth and body fatness.

Similar In Body Dimension

Although the 1983-85 finalists were lighter and thinner than their counterparts of almost 2 decades ago (Table V), they were remarkably similar in body dimension. This latter finding was also true for the non-finalists (Table VI). Because the anthropometric measurements between the 2 groups was similar, we believe a single anthropometric equation (Table IV) will be effective in accurately predicting a minimal wrestling weight for the majority of Iowa scholastic wrestlers. The high correlation coefficient (.93) implies that the prediction equation closely parallels results obtained with hydrostatic weighing. Also, while research continues, it does not appear that additional data will substantially alter these findings.

The measurement of body dimensions and skinfolds is not a technically difficult procedure as witnessed by the large number of schools, clubs, organizations, and clinics which use them to estimate ideal body weight. Results from both the present and previous studies[6, 7] indicate that accurate measurement techniques can be taught. With the aid of computers, the calculation and dissemination of results to athletes, schools, and conferences would not be an insurmountable task.

Advocate Prediction Formula

Despite 17 years of research and education pertaining to the physiological consequences of "making weight," it is questionable whether weight-cutting practices in Iowa have improved. Our interpretation of the data shown in Table I is that too many wrestlers are losing too much weight in order to compete in athletics. To date, no scientific reports demonstrate convincingly that losing muscle mass and fluids to a body weight of less than 5% fat will improve wrestling performance.

In fact, the data show the opposite result and readers should refer to the sources which carefully document this point.[1, 8] The present study proves that scientifically determined and simple methods are available to accurately determine a minimal wrestling weight. Therefore, it seems warranted that a program be developed to educate the lay public, coaches, and athletes to the potential risks of "weight cutting" and to encourage the use of the minimal weight prediction formula.

Minimally, this would entail presenting a series of clinics at regional locations throughout the state. The clinics would include an educational session reviewing the clinical and research evidence supporting the ACSM and AMA positions on "weight cutting." In addition there would be a practical session to familiarize participants with the various techniques for measuring body fat. A comprehensive plan would provide the training needed to certify individuals in the techniques required to measure body fat and be accompanied by a mandate to test all participants before the competitive season.

The time has come for the Iowa Medical Society and the Iowa High School Athletic Association to seriously address the issue of "making

weight" by scholastic wrestlers and to consider methods to reduce the health hazards[1, 2, 8] associated with the practice. With the established validity of the minimal weight prediction formulas, we recommend the adoption of this approach to determine a wrestling weight before the season begins and the training of certified testors. The large number of active participants in wrestling and the potential health risks justify the need for action.

Acknowledgement

The excellent technical assistance of Mr. John G. Edwards, Mr. J. Michael Overton, Dr. Tse-Kia Tcheng, and Ms. Julie A. Wegner is acknowledged.

Information Available

Further information, including the prediction equations, is available for both the skeletal and the skinfold anthropometric methods. Inquiries may be directed to the authors or the editors of IOWA MEDICINE.

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COMMENTING EDITORIALLY



GEARING UP FOR WINDING DOWN

THE AMA Department of Practice Management provides an ongoing series of seminars and publications to assist physicians with their professional activities. One of these is a workshop on how to make retirement less complicated and more rewarding. A full day is devoted to "winding down" the medical practice, personal planning for the lifestyle change and the impact of that change upon a physician's family. These discussions are designed for physicians and spouses because both must enter into the planning process.

An appropriate quotation from R. W. Montgomery, M.D. appears at the beginning of the seminar manual: *As we proceed through pre-med, medical school and post-graduate training to practice, we become more expert in progressively narrower areas of action. All of our energies and all of our payment, both emotional and financial, are focused in the same area. Some doctors have outside interests and hobbies, but many of us put all our eggs in one basket — plenty of challenge, plenty of financial rewards, plenty of emotional satisfaction — when the job is well done. Why would any doctor ever want to retire?**

That statement generates two main thoughts. Firstly, for the most part physicians follow a rather narrow life pathway. We spend inordinate hours studying and practicing medicine without much concern for our families or our future years of less activity. Secondly, why give up all the benefits of practice for a different style of living? Yet, we must look at the facts.

Medicine is a demanding mistress. The scientific aspects of medicine are mind-boggling in their complexity compared to a few decades ago. We need computers and other instruments of technology to keep pace with the knowledge being generated. Furthermore, the business of medicine is no simple matter. It requires much skill and attention to address the multitude of laws, regulations and responsibilities associated with operating a medical office. We need more than an office nurse and a receptionist. We need office managers, people skilled in complex bookkeeping, ancillary personnel with appropriate skills, plus legal assistance.

Many younger physicians talk of early retirement. It is no wonder when we observe people in the business world retiring with substantial remuneration at the age of 55-60 years. No longer is it 30 years, a gold watch and "out you go." Our society demands retirement benefits either from the private sector or through Social Security.

SEVERAL YEARS AGO, I recorded my thoughts on retirement.† For the most part, those feelings remain the same. It may be more appropriate to substitute the term "replan" for "retire," for a fulfilling retirement depends upon advance planning. It is in this area that I found fault with the recent AMA workshop. No, I am not retiring; but my wife and I concurred that it would be wise to look at the options. Most of those at the workshop were contemplating retirement in the near future. Several had already sold their practices. What was wrong? For those physicians, the planning was coming a bit too late.

Planning for retirement must begin at entry into practice. The younger physician has a greater stimulus with the benefits of corporate practice or use of Keogh retirement plans and IRA's. The AMA "gearing up for retirement" workshop should be directed at the 40-year-old physician who has established a practice and

(Please turn to page 458)

* Montgomery, R. W., The Retirement Questions, Group Practice Journal, January, 1981.

† Alberts, M. E. Editorial, Retirement, Journal of the Iowa Medical Society, May, 1979.

L. W. 'BILL' SWANSON, M.D.

IT IS RARE when a person in the medical profession, indeed in any profession, accomplishes so much good and positively influences so many people that his passing inspires an outpouring of dismay and sorrow throughout the community in which he lived. Dr. L. W. "Bill" Swanson was one of those people. His sudden death August 5 shocked and saddened everyone who had been touched by his kindness, his compassion and his dedication to medicine.

As the editorial writer stated, Bill Swanson could take credit for many accomplishments during his more than 45 years of medical practice. He was a pioneer who contributed greatly to medicine in Mason City and in Iowa. He was responsible for important advancements, particularly in the area of intensive coronary care. Because of his efforts, St. Joseph Mercy Hospital in Mason City established one of the first coronary care units in Iowa. Dr. Swanson also created the first mobile coronary care unit in the state, which continues as a private ambulance service in Mason City.

> *"He held many offices and earned many accolades. But he will be remembered as a friend — an old-fashioned nice guy. He was tough, he was kindly, he was funny. He cared about people. His motive was to help people, and he was persuasive because he conveyed his concerns to other people. Mason City is a better place to live because of his efforts. Indeed, some Mason Cityans who never knew him are alive because of (his) work in upgrading emergency coronary care here. But that was just one achievement among many in the community. He was a friend the community will miss."* — **Mason City Globe Gazette — 8/7/85**

Dr. Swanson was a 1936 graduate of the University of Iowa College of Medicine. After 6 years of internships and a residency at the University of Iowa Hospitals, he returned, in 1942, to his hometown of Mason City to practice internal medicine.

In addition to his private practice, Dr. Swanson served from 1942-67 as health director at the St. Joseph Mercy Hospital School of Nursing. He retired from private practice in 1983, to join St. Joseph Mercy Hospital as director of development.

Dr. Swanson worked diligently to promote organized medicine. He served as president in 1978 of the Iowa Medical Society, as well as having served on the Board of Trustees. He was an Iowa physician representative to the American Medical Association House of Delegates from 1951 to 1976. He was president and treasurer of the Cerro Gordo County Medical Society. In addition, he was president of the Iowa Heart Association.

He held the honor of being named Clinical Professor from the University of Iowa College of Medicine, for his distinguished service. He also was active in civic affairs, having served as president of both the Mason City Area Chamber of Commerce and the Mason City Rotary Club.

BILL SWANSON'S many accomplishments were important to the organizations and the people they served. However, even if he had not succeeded so often and had not accomplished so much, he still would be loved and remembered by all who knew him. Because he cared so much, it was impossible to not care for him. He was an extremely compassionate physician, who believed throughout his career that he had a responsibility to his patients' emotional needs, as well as their physical ones.

His compassion extended beyond that which he felt for his patients. He shared his warmth and humor with everyone, and went out of his way to be a friend to anyone in need of one.

Indeed, as the editorial stated, Bill Swanson was a friend. And indeed, we miss him. — WILLIAM ROSENFELD, M.D., *Internal Medicine Associates, Mason City, Iowa*



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(Continued from page 454)

has the funds and lead time necessary for retirement planning.

Successful retirement planning is not a short-term program to be developed at the last moment. There must be short-term and long-term objectives. Estate planning is necessary to protect family interests. Then, when the time comes to consummate the actual retirement, there are complex matters such as valuing your medical practice for sale, notifying patients transfering records, etc.

A valuable workbook was provided for the AMA workshop attendees. Much information also came in the form of handouts and talks by experts about tax planning, investments, estate planning, Social Security and personal affairs. The speakers were topnotch, and opportunity was provided for discussions. I recommend the workshop but do not wait until you are over 60 to attend. Attend when you are 40-45, then perhaps again at a later date. The cost is nominal, the time well-spent. Gear up for retirement early; replan for a different way of life that can be as rewarding and fulfilling as the practice of medicine. — M.E.A.

Letter to the Editor

COMMENT ABOUT AIDS

Dear Editor:

(Re your August articles), I am concerned by the medical profession's unwillingness to publicize the mode of transmission of AIDS. Three generalities appear established beyond reasonable doubt:

(1) The disease is transmitted by the blood-to-blood route. Infected blood injected directly into the bloodstream of another person can transmit the disease. This is the mode of transmission in the recipients of transfusions and blood products, especially hemophiliacs. It is the mode of transmission in drug addicts who share contaminated needles in the intravenous injection of illegal drugs.

(2) There is no proof of any spread of the disease by any other route. This poses an extreme medical dilemma because it is presumed every disease must have an alternative and preferred route of transmission. The blood-to-blood route is too rare and haphazard to sustain the disease in nature and the disease must soon become extinct. Semen and saliva have been implicated as carriers of the disease but this remains unproved. Normal vaginal intercourse has been implicated but this is also unproved. The problem of these 3 possibilities is that contacts of these types are extremely common, numbering in the millions daily, but the incidence of disease linked to these routes is extremely remote, a maximum of 500 cases occurring in these ways over a span of 6 years. The risk per contact is far less than one per million and this raises the question this spread does not exist at all. Also, in these cases the possibility of blood-to-blood contact cannot be ruled out. Some of these persons, including women, may have engaged in homosexual practices. A variety of bizarre incidents involving the rubbing or bumping together of raw or wounded surfaces will account for an occasional case, perhaps the 500 cases which are presently unexplained.

(3) One homosexual practice, anal intercourse, does frequently involve blood-to-blood contact. The anus of the passive partner is almost constantly raw, abraded, and injured. There are occasionally minimal abrasions on the penis of the active partner. When these two surfaces come in contact a blood-to-blood transmission of disease becomes possible. Thus a carrier of the virus could only transmit it when he had a raw wound and other persons could only acquire the disease when they had raw wounds.

These 3 generalities lead to some interesting possibilities. The disease is not due to homosexuality. Female homosexuals don't get it. The disease is not due to homosexual practices. One specific practice, anal intercourse, is the problem, and by this route women are at risk the same as men.

I believe this problem should be widely publicized. A great many people, especially women, have the capability to avoid anal intercourse. The homosexuals should be advised not to engage in anal intercourse if they can possibly avoid it, to use condoms, and to avoid contact when they have open wounds. — *C. E. Berryhill, M.D.*

Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



PLATITUDINOUS INSIGHTS

An Editor of a journal, which publishes (purportedly) scholarly articles dealing with continuing education in the health professions, recently sent me a manuscript and asked me to review its suitability for publication. Although it's sort of a pain to do that, I've always tried to oblige such requests with a careful critique, because I feel the entire enterprise of scholarly publication needs the quality control inherent in the peer review process. It somehow seems "right" for me to pay some "civic rent" in this way. And not only that, but I always seem to learn something worthwhile in the process; if nothing else, it helps keep sharp my skill in the vital need to be a critical reader (meaning both positive and negative judgments).

In the manuscript I received, the author said that physicians tend to resist change. At that point there appeared a number referring to a citation in the bibliography. As a reviewer, even more than as a reader, I try faithfully to look to the references, where there often are bloopers that may be surprising, amusing, or even serious. This time it was not only a reflex, but I wanted to see what august source had enunciated such a platitude. Would you believe it? — the citation was an article of mine! Aghast, I fished out my article and read it again. I swear to you my innocence. Guilty as I sometimes am of emitting platitudes, in speech or print, I really was reporting in the article how a group of physicians in fact changed their behavior after hearing a brief talk. But not all of them changed, and that fact perhaps led the author I was reviewing to speak of physicians as resisting change (not my phrase). No quotation marks had been used, so my complaint could only be that the overall thrust of my article was not correctly represented in this fractional paraphrase.

The experience prompted two conclusions. First, medical writers too often cite "the literature" regarding perfectly obvious or well-known matters that seem sufficiently known from general experience. For example, if I wanted to say that the sun rises in the east, I wouldn't think it necessary to cite a textbook of astronomy (or poetry, or anything). And so I should not think it needed to cite a presumed authority (authority only because published) to support the assertion that physicians tend to resist change. (Are they not humans — If you prick them, do they not bleed?)

> ***"And so I should not think it needed to cite a presumed authority (authority only because published) to support the assertion that physicians tend to resist change."***

Second, I concluded that you mustn't believe everything you read. (I put this here to *prove* to you my capacity to utter a platitude). As authors recapitulate or paraphrase others, they just don't always get it right. Reading should be done with the mental gears engaged — not in neutral — which is why I've resisted Sir William Osler's famous suggestion to physicians to take the nightly 30-minute dose of bedtime reading. To be mentally engaged is too seldom consonant with dozing off at the

(Please turn to page 470)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

MONOTHERAPY WITH LONG HALF-LIFE CEPHALOSPORINS: EXAMPLE OF CEFTRIAXONE

MODERN ANTIMICROBIAL THERAPY has become increasingly complex and sometimes confusing with the rapid introduction of new agents over the past 20 years. Some of these antibiotics have relatively narrow spectra, and this has led to the frequent use of at least 2 antibiotics in seriously ill patients in order to "cover" most potential pathogens. Moreover, the additive or synergistic effects of 2 antibiotics against some microbes, for example, *Pseudomonas*, are desirable. As increasing numbers of drugs are administered to the same patient, however, increasing adverse effects can be expected. This includes not only adverse effects of each drug, but also drug interactions and drug administration errors. Although such prescribing has for the most part been necessary, the introduction of very broad spectrum third-generation cephalosporins has opened the door to possible monotherapy of seriously ill, nonneutropenic patients.

Concomitant with the multidrug therapy described above, frequent dosing of the individual agents has been necessary. Most of the antibiotics used in these patients must be administered every 4 to 8 hours. Thus, it is not unusual for a seriously ill patient receiving 2 antibiotics to require up to 8 infusions per day. Multiple doses entail increased costs since the preparation and administration of a dose of a drug in a hospital may be as expensive as the drug itself. Multiple infusions may increase the risk to the patient of particulate-induced phlebitis and bacterial contamination of IV lines and restrict the patient's activities to some extent. The setup and maintenance of multiple IV infusions are also taxing on the nursing staff.

Thus the development of antibiotics that could be given alone and less often might represent a major advance in antimicrobial therapy: costs might be decreased, patient tolerance may be improved, and the nursing staff might be free to perform other important patient care tasks. Ceftriaxone and cefonicid may represent such antibiotics. Cefonicid is a second-generation cephalosporin with a spectrum similar to cefamandole, and it was recently reviewed by the MEDICAL LETTER.[1] Ceftriaxone is a parenteral third-generation cephalosporin with an antimicrobial spectrum similar to cefotaxime, and in the following paragraphs it is reviewed in depth and preliminary recommendations for its use are offered.

Pharmacokinetics

The pharmacokinetics of ceftriaxone are unique among the cephalosporins. It has the longest half-life of any cephalosporin, 6.5 to 8.6 hours, and this does not change markedly with renal or hepatic insufficiency.[2] Urinary excretion accounts for 50 to 65% of an administered dose, the rest being excreted via the biliary tract.[2] Penetrance into the cerebrospinal fluid is good in the presence of inflamed meninges.[3, 4, 5] The recommended adult dose is 1 to 2 grams every 24 hours; the pediatric

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg, for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg), Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg), Sustained Action Tablets (40 mg).

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dose is 50 to 100 mg/kg/day in 1 or 2 divided doses.

The nonlinear protein binding displayed by this compound is responsible for some of its pharmacokinetic features. As the concentration of ceftriaxone increases, the free fraction of the drug increases.[2] As with all drugs, an increase in the free fraction results in an increase in the volume of distribution. This alone would lengthen the half-life, but the clearance also increases proportionately with the dose, since free ceftriaxone is filtered by the glomerulus and not reabsorbed.[2] The half-life thus remains unchanged over the dose range used clinically.

In patients with renal or hepatic failure, protein binding decreases and the free fraction of ceftriaxone increases.[2] Therefore, in renal insufficiency, the clearance of ceftriaxone does not decrease in proportion to the decrease in creatinine clearance. In hepatic failure, the renal clearance is actually higher than in normal patients. In both situations, the half-life is not markedly prolonged, and the dose remains unchanged.[2] However, if both renal and hepatic insufficiency are present, the half-life may be very prolonged, and dose adjustments may need to be made on the basis of ceftriaxone levels.[2]

Anephric patients present a special problem. Most dialysis patients clear the drug relatively well, and no dosage adjustment is required. A few, however, will have markedly increased half-lives, possibly due to subclinical declines in hepatic function.[2] In anephric patients, determination of ceftriaxone levels may be required to determine whether a patient has an unexpectedly long half-life.

In pediatric patients the half-life is somewhat shorter and ranges from 4.0 to 6.5 hours.[2] This still allows for longer dosing intervals compared to most cephalosporins. In the elderly, the half-life ranges from 7.5 to 12.2 hours.[2] Despite the progressive decline in creatinine clearance with age, the half-life remains fairly constant. This is because protein binding of ceftriaxone decreases with age and more free ceftriaxone is available to be filtered and excreted.[2]

Clinical Trials

The clinical use of antibiotics can be divided into 3 modes: prophylaxis, presumptive therapy, and definitive therapy. Prophylaxis is the

TABLE 1

CONTROLLED TRIALS OF CEFTRIAXONE FOR SURGICAL PROPHYLAXIS*

Surgical Procedure (Ref.)	*Compared Regimen*	*Result*
A. TURP[8]	Placebo	Less bacteriuria in treated patient
B. Vaginal Hysterectomy[9]	Cefazolin 1 gm IM preop and 1 gm IV 8 and 16 h postop	No difference
C. High-risk Biliary Surgery[10]	Cefazolin 1 gm preop and at 8, 16, and 24 hours postop	No difference
D. Open-heart Surgery[11]	Cefazolin 1 gm preop and every 8 hours for 48 hours	No difference
E. Orthopedic Surgery[12]	Cefuroxime 1.5 gm preop and every 8 hours for 48 hours	No difference

* The dose of ceftrioxone given was 1 gm preoperatively, except in arthapedic surgery where another dose was given 24 hours postoperatively.

use of antibiotics to prevent disease and is most frequently seen in relationship to surgical procedures. Presumptive therapy is antibiotic therapy before the offending organism or organisms are known. By culturing the patient before antibiotic therapy begins, one hopes to convert presumptive therapy to definitive therapy, which is directed at 1 or more culture-proven pathogens. The initial open, uncontrolled trials of ceftriaxone were promising, and a number of randomized, controlled trials have been done using ceftriaxone in each of the modes described above. Two things are important to remember when analyzing these data: first, most of these trials have been sponsored by the manufacturer and include relatively few patients; second, although all of the data about ceftriaxone presented below are from randomized, controlled trials, none of the trials are double-blind. Hence, the results must be regarded as preliminary.

Although third-generation cephalosporins should not be used for antimicrobial prophylaxis in surgery,[6, 7] several studies using ceftriaxone for this have been reported, and the results are shown in Table 1. Except in transurethral resection of the prostate, ceftriaxone was tested against multiple doses of cefazolin or cefuroxime. Although cefazolin is the drug of choice in those studies in which it was used, a single preoperative dose is recommended (long procedures may require an intraoperative dose, as well).[6] Ceftriaxone has not been tested against a single-dose cefazolin regimen in these situations. Although many of the authors cited the single dose of ceftriaxone as a major advantage of the drug, a single dose of cefazolin may be just as effective as a single dose of ceftriaxone in prophylaxis during these procedures. Cefuroxime is not the drug of choice for orthopedic prophylaxis,[6] so the applicability of that study is questionable. Finally, although ceftriaxone was more effective than placebo in preventing post-TURP bacteriuria, no reduction in morbidity or mortality was shown. Similar results for single doses of gentamicin or cefoxitin have been reported.

Presumptive therapy for seriously ill patients frequently has required 2 or more antibiotics in order to ensure "broad" coverage of most of the suspected organisms and to provide for synergistic or additive effects against particularly dangerous bacteria. Although multidrug regimens are firmly entrenched in medical practice for presumptive therapy, the third-generation cephalosporins offer the possibility of monotherapy for nonneutropenic patients. For example, cefotaxime has been shown in a randomized, controlled, double-blind trial to be more effective than the combination of nafcillin and tobramycin in patients with presumed sepsis and from whom gram-negative and gram-positive organisms were isolated.[13] Similarly, ceftriaxone has been shown to be as effective as other regimens in the presumptive therapy of surgical sepsis and lower respiratory tract infections in adults and meningitis in children.

Ceftriaxone has been shown to be as effective as clindamycin plus gentamicin in the treatment of intraabdominal abscess, peritonitis, or soft-tissue infections.[14] 87% of the patients, distributed equally into both groups, underwent at least 1 operation to excise, debride, or drain the pathologic process. These infections were caused by a variety of aerobic, predominantly gram-negative, and anaerobic bacteria; and 1 gram of ceftriaxone was administered twice daily. Some caution is warranted in interpreting this study since proper surgical treatment of these processes may be more important than the specific antibiotic regimen employed.

In lower respiratory tract infections, ceftriax-

TABLE 2

ESTIMATED TOTAL COST OF CEFTRIAXONE AND SELECTED OTHER ANTIBIOTICS

Antibiotic	*Dose*	*Acquisition Cost**	*Administration Costs†*	*Total Costs*
ceftriaxone	2 gm every 24 hours	$460.00	$ 22.40- 44.80	$482.40-504.80
clindomycin	600 mg every 8 hours	332.70	134.40-268.80	474.90-609.30
gentomicin	80 mg every 8 hours	7.80		
nofcillin	1.5 gm every 4 hours	113.40	201.60-403.20	322.80-524.40
gentomicin	80 mg every 8 hours	7.80		
cefoxitin	2 gm every 6 hours	545.60	89.60-179.20	635.20-724.80

* Acquisition cost of o ten-doy course of theropy

† Based on estimoted preporotion ond odministrotion costs ($2.24-4.48/dose[25, 26]) of o ten-day course of theropy.

one was as effective as amoxicillin. One study included patients with chronic bronchitis or pneumonia, and the predominant organisms were *H. influenzae* and *S. pneumoniae*.[15] The dosage of ceftriaxone was 500 mg twice daily. The other study involved patients with pneumonia, predominantly pneumococcal; ceftriaxone was administered once a day in A 2-gram dose.[16] These trials are difficult to interpret since amoxicillin is not standard therapy for community-acquired pneumonia.

Three randomized trials have compared ceftriaxone to traditional therapy in bacterial meningitis in pediatric patients.[3-5] All 3 have found it to be as effective as ampicillin plus chloramphenicol in children greater than 1 month of age and as effective as ampicillin plus gentamicin in infants less than 1 month of age. Etiological agents have included *S. pneumoniae*, *H. influenzae*, Group B *Streptococcus*, *N. meningitidis*, and *E. coli*. Ceftriaxone was administered twice daily in a 50 mg/kg dose.

Definitive therapy involves the specific treatment of cultured pathogens. Ceftriaxone has been studied in the treatment of gonorrhea and in the treatment of urinary tract infections due to predominantly gram-negative organisms.

Ceftriaxone, in a single 125 mg intramuscular dose, was more effective than 2 grams of spectinomycin against genital, anorectal, and pharyngeal gonococcal infections.[17, 18] Five patients treated with ceftriaxone had penicillinase-producing *N. gonorrhea* infections. The organisms were eradicated in 4 patients, and the fifth patient was lost to follow-up. Ceftriaxone was not effective against *C. trachomatis*. Additionally, ceftriaxone is as effective as aqueous procaine penicillin G in uncomplicated gonorrhea in women.[19]

Ceftriaxone has been compared to a variety of regimens in acute and chronic, complicated and uncomplicated urinary tract infections. One gram of ceftriaxone every day is as effective as cefuroxime 0.75 grams 3 times daily in patients with complicated urinary tract infections.[20] All of these patients underwent some type of urological procedure to correct the underlying, predisposing abnormality. In patients with acute exacerbations of chronic urinary tract infections, ceftriaxone 500 mg twice daily was more effective than gentamicin 80 mg 3 times daily.[21] Finally, in a study involving acute exacerbations of chronic urinary tract infections, 500 mg of ceftriaxone as a one-time dose was more effective than 80 mg of tobramycin in a one-time dose.[22] The predominant organisms cultured in all of these studies were gram-negative rods.

In summary, clinical trials have demonstrated the efficacy of ceftriaxone in a variety of circumstances. Although it is effective as antimicrobial prophylaxis for surgery, cheaper, more narrow-spectrum antibiotics are available and ceftriaxone should not be used unless data are forthcoming which indicate that it is clearly superior to established regimens. Presumptive therapy with ceftriaxone is as effective as standard therapy for intraabdominal abscess, peritonitis, and soft-tissue abscess in adults (with appropriate surgical therapy) and meningitis in pediatric patients. Against gonorrhea and gram-negative urinary tract infections, it is very effective. If ceftriaxone can be shown to be cheaper, less toxic, and/or easier to administer, it may begin to play an important role in the treatment of these infections.

Before prescribing, see complete prescribing information in SK&F CO. literature or *PDR*. The following is a brief summary.

* **WARNING**

This drug is not indicated for initial therapy of edema or hypertension. Edema or hypertension requires therapy titrated to the individual. If this combination represents the dosage so determined, its use may be more convenient in patient management. Treatment of hypertension and edema is not static, but must be reevaluated as conditions in each patient warrant.

Contraindications: Concomitant use with other potassium-sparing agents such as spironolactone or amiloride. Further use in anuria, progressive renal or hepatic dysfunction, hyperkalemia. Pre-existing elevated serum potassium. Hypersensitivity to either component or other sulfonamide-derived drugs.

Warnings: Do not use potassium supplements, dietary or otherwise, unless hypokalemia develops or dietary intake of potassium is markedly impaired. If supplementary potassium is needed, potassium tablets should not be used. Hyperkalemia can occur, and has been associated with cardiac irregularities. It is more likely in the severely ill, with urine volume less than one liter/day, the elderly and diabetics with suspected or confirmed renal insufficiency. Periodically, serum K^+ levels should be determined. If hyperkalemia develops, substitute a thiazide alone, restrict K^+ intake. **Associated widened QRS complex or arrhythmia requires prompt additional therapy.** Thiazides cross the placental barrier and appear in cord blood. Use in pregnancy requires weighing anticipated benefits against possible hazards, including fetal or neonatal jaundice, thrombocytopenia, other adverse reactions seen in adults. Thiazides appear and triamterene may appear in breast milk. If their use is essential, the patient should stop nursing. Adequate information on use in children is not available. Sensitivity reactions may occur in patients with or without a history of allergy or bronchial asthma. Possible exacerbation or activation of systemic lupus erythematosus has been reported with thiazide diuretics.

Precautions: The bioavailability of the hydrochlorothiazide component of 'Dyazide' is about 50% of the bioavailability of the single entity. Theoretically, a patient transferred from the single entities of Dyrenium (triamterene, SK&F CO.) and hydrochlorothiazide may show an increase in blood pressure or fluid retention. Similarly, it is also possible that the lesser hydrochlorothiazide bioavailability could lead to increased serum potassium levels. However, extensive clinical experience with 'Dyazide' suggests that these conditions have not been commonly observed in clinical practice. Do periodic serum electrolyte determinations (particularly important in patients vomiting excessively or receiving parenteral fluids, and during concurrent use with amphotericin B or corticosteroids or corticotropin [ACTH]). Periodic BUN and serum creatinine determinations should be made, especially in the elderly, diabetics or those with suspected or confirmed renal insufficiency. Cumulative effects of the drug may develop in patients with impaired renal function. Thiazides should be used with caution in patients with impaired hepatic function. They can precipitate coma in patients with severe liver disease. Observe regularly for possible blood dyscrasias, liver damage, other idiosyncratic reactions. Blood dyscrasias have been reported in patients receiving triamterene, and leukopenia, thrombocytopenia, agranulocytosis, and aplastic and hemolytic anemia have been reported with thiazides. Thiazides may cause manifestation of latent diabetes mellitus. The effects of oral anticoagulants may be decreased when used concurrently with hydrochlorothiazide; dosage adjustments may be necessary. Clinically insignificant reductions in arterial responsiveness to norepinephrine have been reported. Thiazides have also been shown to increase the paralyzing effect of nondepolarizing muscle relaxants such as tubocurarine. Triamterene is a weak folic acid antagonist. Do periodic blood studies in cirrhotics with splenomegaly. Antihypertensive effects may be enhanced in post-sympathectomy patients. Use cautiously in surgical patients. Triamterene has been found in renal stones in association with the other usual calculus components. Therefore, 'Dyazide' should be used with caution in patients with histories of stone formation. A few occurrences of acute renal failure have been reported in patients on 'Dyazide' when treated with indomethacin. Therefore, caution is advised in administering nonsteroidal anti-inflammatory agents with 'Dyazide'. The following may occur: transient elevated BUN or creatinine or both, hyperglycemia and glycosuria (diabetic insulin requirements may be altered), hyperuricemia and gout, digitalis intoxication (in hypokalemia), decreasing alkali reserve with possible metabolic acidosis. 'Dyazide' interferes with fluorescent measurement of quinidine. Hypokalemia is uncommon with 'Dyazide', but should it develop, corrective measures should be taken such as potassium supplementation or increased dietary intake of potassium-rich foods. Corrective measures should be instituted cautiously and serum potassium levels determined. Discontinue corrective measures and 'Dyazide' should laboratory values reveal elevated serum potassium. Chloride deficit may occur as well as dilutional hyponatremia. Concurrent use with chlorpropamide may increase the risk of severe hyponatremia. Serum PBI levels may decrease without signs of thyroid disturbance. Calcium excretion is decreased by thiazides. 'Dyazide' should be withdrawn before conducting tests for parathyroid function.

Thiazides may add to or potentiate the action of other antihypertensive drugs.

Diuretics reduce renal clearance of lithium and increase the risk of lithium toxicity.

Adverse Reactions: Muscle cramps, weakness, dizziness, headache, dry mouth; anaphylaxis, rash, urticaria, photosensitivity, purpura, other dermatological conditions; nausea and vomiting, diarrhea, constipation, other gastrointestinal disturbances; postural hypotension (may be aggravated by alcohol, barbiturates, or narcotics). Necrotizing vasculitis, paresthesias, icterus, pancreatitis, xanthopsia and respiratory distress including pneumonitis and pulmonary edema, transient blurred vision, sialadenitis, and vertigo have occurred with thiazides alone. Triamterene has been found in renal stones in association with other usual calculus components. Rare incidents of acute interstitial nephritis have been reported. Impotence has been reported in a few patients on 'Dyazide', although a causal relationship has not been established.

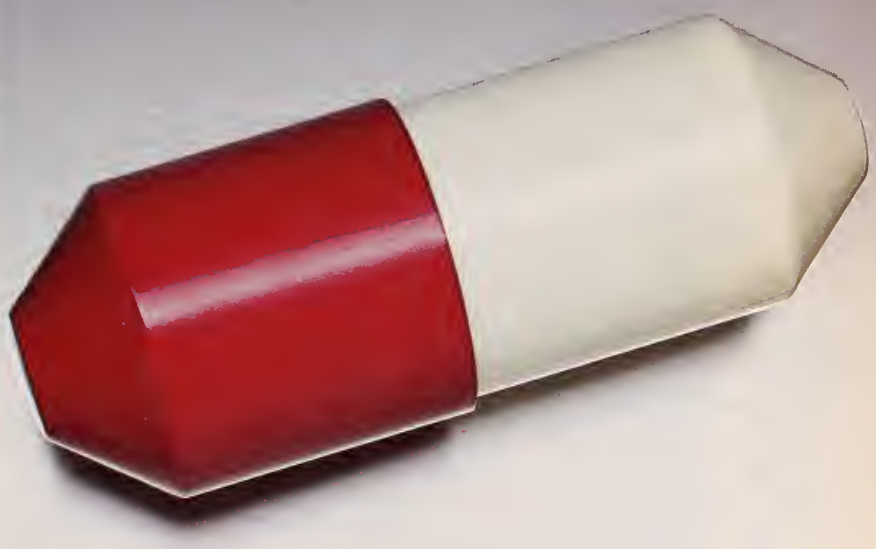
Supplied: 'Dyazide' is supplied as a red and white capsule, in bottles of 1000 capsules; Single Unit Packages (unit-dose) of 100 (intended for institutional use only); in Patient-Pak™ unit-of-use bottles of 100.

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Contraindications: Severe left ventricular dysfunction (see *Warnings),* hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (except in patients with a functioning artificial ventricular pacemaker), 2nd- or 3rd-degree AV block. **Warnings:** ISOPTIN should be avoided in patients with severe left ventricular dysfunction (e.g., ejection fraction < 30% or moderate to severe symptoms of cardiac failure) and in patients with any degree of ventricular dysfunction if they are receiving a beta blocker. (See *Precautions.)* Patients with milder ventricular dysfunction should, if possible, be controlled with optimum doses of digitalis and/or diuretics before ISOPTIN is used. (Note interactions with digoxin under *Precautions.*) ISOPTIN may occasionally produce hypotension (usually asymptomatic, orthostatic, mild and controlled by decrease in ISOPTIN dose). Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C:* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported. (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. Revised August, 1984. 2385

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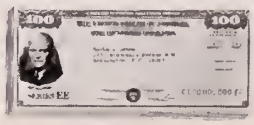


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Adverse Effects

Adverse effects of ceftriaxone have been minimal in the comparative studies published to date. The only side effects seen consistently more often in ceftriaxone-treated patients were diarrhea and candidal colonization which are common side effects of any broad-spectrum antibiotic. The diarrhea was usually self-limiting and was not due to pseudomembranous colitis. A review of 151 clinical studies of ceftriaxone involving 2,640 patients revealed that the most common side effects were a rash in 2.8%, diarrhea in 2.7%, eosinophilia in 6%, and elevations of liver function tests in 5%.[23, 24] In 0.3%, the prothrombin time was prolonged.[24] Hypoprothrombinemia has become a serious side effect with moxolactam and cefoperazone, but it appears to be much less common in patients treated with ceftriaxone. A disulfiram-like reaction, similar to that noted with cefoperazone and moxolactam, occurred in 0.04% of patients.[24] If outpatient therapy with ceftriaxone becomes a reality, this may become a greater problem. These preliminary data indicate that therapy with ceftriaxone is probably as safe as therapy with the other third-generation cephalosporins.

Cost

An important, but difficult to quantify, aspect of therapy with ceftriaxone is the possibility of significant cost savings. Ceftriaxone is by far the most expensive cephalosporin on a per-gram basis, but the single daily dose may ultimately lead to less expensive therapy. Table 2 compares the total estimated cost of a 10-day course of ceftriaxone with similar courses of nafcillin and gentamicin, clindamycin and gentamicin, and cefoxitin. Acquisition costs are from The University of Iowa Hospitals and Clinics. Preparation and administration costs (pharmacy and nursing labor, IV tubing, medication bags, etc.) are estimated based on 2 recent studies by industrial engineers.[25, 26] These costs were calculated by actual measurement of the time required and materials used in preparing and administering a parenteral antibiotic at hospitals of various sizes using 1 of 2 drug administration methods (i.e., buretrol or minibag).[25, 26] The cost of drug level monitoring is not included in Table 2, although it would add to the total cost of any regimen using aminoglycosides.

It can be seen that the total cost for a course of ceftriaxone compares favorably with costs of alternative regimens. This does not mean that costs of hospitalization will automatically be lower if one uses ceftriaxone. First, since some of the decreased total cost will be in reduced labor requirements, cost savings will not immediately follow. After all, these personnel are still going to be paid, whether they are preparing or administering ceftriaxone or doing something else. It does free them for other work, however, and some shift in personnel requirements may ultimately result. Secondly, the cost saved will depend to some degree on the drug delivery system in place in a given hospital. Acquisition costs will be relatively constant, dependent only on the contractual arrangements with the supplier. Third, with the prospective payment systems in place, cost to the third-party payer will not change just because total drug costs are less. Operating costs of the hospital may be less, however.

Conclusions and Recommendations

Ceftriaxone is a new parenteral third-generation cephalosporin with interesting pharmacokinetic features. It has a much longer elimination half-life which makes it suitable for once-daily dosing in adults. The apparent low incidence of side effects, the results of randomized studies, and cost considerations make ceftriaxone rational for monotherapy of some infections in nonneutropenic patients. It can be recommended for intraabdominal abscess, peritonitis, soft-tissue abscess, and complicated urinary tract infections in adults and for meningitis in pediatric patients. For populations where extragenital gonorrhea is likely, it may be the drug of choice. Ceftriaxone is not effective against enterococci. Its utility as monotherapy against pseudomonads is questionable at present, and it should not be used alone as presumptive therapy if *Pseudomonas* is a strong consideration. Some isolates are sensitive, and it may be useful after culture and sensitivity reports return. Future possibilities for ceftriaxone include the treatment of gram-negative meningitis in adults, presumptive therapy of sepsis in nonneutropenic patients, and outpatient therapy of some chronic infections, for example, osteomyelitis. At this time, however, ceftriaxone is not recommended for these indications, and we must await further

clinical trials. Nevertheless, once-a-day therapy with one antibiotic may be adequate for selected serious infections in the noneutropenic patient. — JAMES C. OSBORNE, M.D., *Resident in Internal Medicine.*

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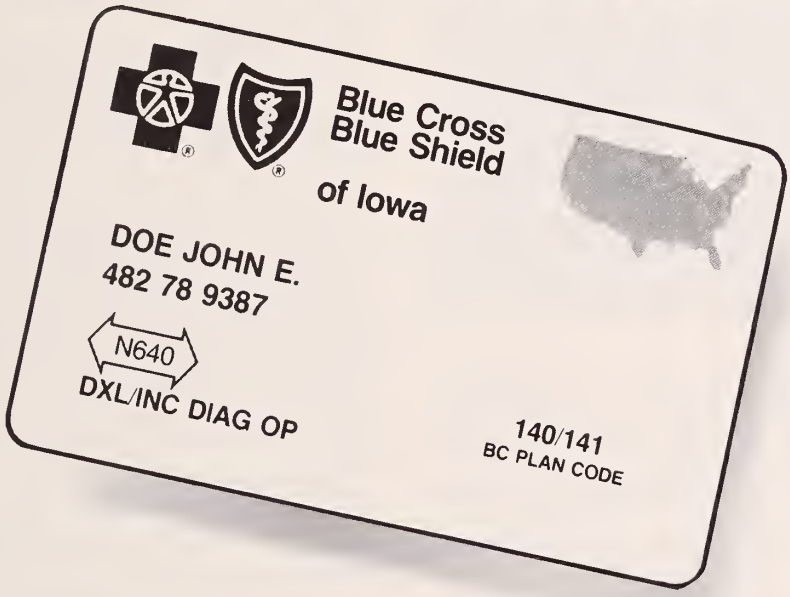
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INFANT FEEDING GUIDELINES

These infant feeding guidelines have been endorsed by the following organizations: Subcommittee on Maternal and Child Health, Iowa Medical Society, Iowa Chapter, American Academy of Pediatrics, Iowa Osteopathic Medical Society, Iowa Academy of Family Physicians.

INFANCY, DEFINED AS 0-12 MONTHS after birth, is a critical period of time from several perspectives. The first year is the period of most rapid growth. An infant's birth weight generally doubles in 4 to 6 months and triples within the first year. Moreover, during this time parents learn how to feed their child and lifelong eating behaviors are adopted by the infant.

This statement is designed to assist parents in meeting the energy and nutrient needs of the first year, as well as the important behavioral interactions. The Iowa State Department of Health recommends mothers breast feed their infants.[1] If the mother chooses not to breast feed during the first year, iron-fortified formula is recommended.[2, 3] The feeding of cow's milk is not recommended until 1 year of age. Use of reduced fat milks and formula is discouraged as a way to control weight gain during infancy.[1, 2, 4]

The timing and frequency of feedings in the first 4 to 6 months is often an issue of concern for new parents. They should be assured that in early infancy 8-12 feedings per day may be normal for the breast and bottle fed baby.[5] As the infant matures, the quantity of breast milk or formula per feeding increases and the number of feedings decreases. While the infant is consuming breast milk or formula alone, no fewer than 4 feedings should be offered in a 24-hour period.

All parents should receive information on: (1) The signs of hunger and satiety so they can judge when the baby is ready to eat and is full. (2) The inappropriate uses of food, including offering food to show affection, to promote sleep or to calm a cranky baby.

Introduction of solids should be related to the infant's developmental readiness. Developmental milestones signaling readiness include sitting alone and the ability to move food from the front to the rear of the mouth.[6, 7] These usually occur between 4 to 6 months of age.[6, 7] The use of an infant feeder to push strained foods to the rear of the mouth is not recommended. Likewise, the feeding of semi-solids in a bottle to prolong sleep at night is discouraged. The initial purpose of introducing solid foods is to assist the infant in developing eating skills. And, research shows that bottlefeeding of semi-solids at night does not extend night sleeping.[6]

At the appropriate time, single ingredient solid foods should be introduced 1 at a time at weekly intervals. This spacing of foods will allow time for food intolerances to be identified. Iron-fortified infant cereals diluted with formula or milk are a good first choice of solid foods. The order of introduction of other foods is not important. The important consideration is that the infant be introduced to a variety of food textures.[7]

To avoid tooth decay, juices should be offered only when the infant is capable of drinking from a cup. This will assure that the natural sugars in juice have limited contact with the teeth. Infant formula and breastmilk may also promote tooth decay, if the feeding is lengthy, or if the beverage is offered frequently

(Please turn to page 470)

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

ALZHEIMER'S DEMENTIA

Cure of the disease is still out of reach. In as devastating a condition as this, even the most modest relief of symptoms—or for that matter keeping them from getting worse or merely slowing their intensification—is a great contribution to patient and family.

HYDERGINE® LC (ergoloid mesylates) is indicated for patients over age sixty who manifest signs and symptoms of idiopathic mental decline. It appears that individuals who respond to HYDERGINE LC therapy are those who would be considered to suffer from some ill-defined process related to aging or to suffer from some underlying condition such as Alzheimer's dementia.

Before prescribing HYDERGINE therapy, the possibility that the patient's signs and symptoms arise from a potentially reversible and treatable condition should be excluded. In addition, because the presenting clinical picture may evolve to suggest an alternative treatment, the decision to use HYDERGINE therapy should be continually reviewed.

HYDERGINE® LC
(ergoloid mesylates)
liquid capsules, 1 mg

THE ONLY PRODUCT INDICATED FOR ALZHEIMER'S DEMENTIA.

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HYD-1085-13

For Brief Summary, please see following page.

HYDERGINE® LC
(ergoloid mesylates) liquid capsules 1 mg

Indications: Symptomatic relief of signs and symptoms of idiopathic decline in mental capacity (i.e., cognitive and interpersonal skills, mood, self-care, apparent motivation) in patients over sixty. It appears that individuals who respond to HYDERGINE therapy are those who would be considered clinically to suffer from some ill-defined process related to aging or to have some underlying dementing condition, such as primary progressive dementia, Alzheimer's dementia, senile onset, or multi-infarct dementia. Before prescribing HYDERGINE® (ergoloid mesylates), the physician should exclude the possibility that signs and symptoms arise from a potentially reversible and treatable condition, particularly delirium and dementiform illness secondary to systemic disease, primary neurological disease, or primary disturbance of mood. Not indicated for acute or chronic psychosis regardless of etiology (see Contraindications).

Use of HYDERGINE therapy should be continually reviewed, since presenting clinical picture may evolve to allow specific diagnosis and specific alternative treatment, and to determine whether any initial benefit persists. Modest but statistically significant changes observed at the end of twelve weeks of therapy include: mental alertness, confusion, recent memory, orientation, emotional lability, self-care, depression, anxiety/fears, cooperation, sociability, appetite, dizziness, fatigue, bothersome(ness), and overall impression of clinical status.

Contraindications: Hypersensitivity to the drug; psychosis, acute or chronic, regardless of etiology.

Precautions: *Because the target symptoms are of unknown etiology, careful diagnosis should be attempted before prescribing HYDERGINE (ergoloid mesylates) preparations.*

Adverse Reactions: Serious side effects have not been found. Some transient nausea and gastric disturbances have been reported, and sublingual irritation with the sublingual tablets.

Dosage and Administration: 1 mg three times daily. Alleviation of symptoms is usually gradual and results may not be observed for 3-4 weeks.

How Supplied: HYDERGINE LC (liquid capsules); 1 mg, oblong, off-white, branded "HYDERGINE LC 1 mg" on one side, "Ⓢ" other side. Packages of 100 and 500. (Encapsulated by R. P. Scherer, N.A., Clearwater, Florida 33518).

HYDERGINE (ergoloid mesylates) tablets (for oral use); 1 mg, round, white, embossed "HYDERGINE 1" on one side, "Ⓢ" other side. Packages of 100 and 500.

Each liquid capsule or tablet contains ergoloid mesylates USP as follows: dihydroergocornine mesylate 0.333 mg, dihydroergocristine mesylate 0.333 mg, and dihydroergocryptine (dihydro-alpha-ergocryptine and dihydro-beta-ergocryptine in the proportion of 2:1) mesylate 0.333 mg, representing a total of 1 mg.

Also available: HYDERGINE sublingual tablets; 1 mg, oval, white, embossed "HYDERGINE" on one side, "78-77" other side. Packages of 100 and 1000. 0.5 mg, round, white, embossed "HYDERGINE 0.5" on one side, "Ⓢ" other side. Packages of 100 and 1000.

HYDERGINE liquid; 1 mg/ml. Bottles of 100 mg with an accompanying dropper graduated to deliver 1 mg. [HYD–ZZ24–6 15 84]

Before prescribing, see package circular for full product information. HYD-1085-13

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STATE DEPARTMENT OF PUBLIC HEALTH

(Continued from page 468)

throughout the day. Parents should be encouraged to offer the bottle only if the infant is hungry and not as a means of entertainment or pacification. Infants should not be put down alone with a propped bottle.

Sweetened beverages and artificially sweetened non-caloric beverages have no place in an infant's diet. Their use may dilute the nutritional quality of the diet while contributing to a preference for sweet foods and drinks.

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5. Feeding of Infants In: Textbook of Pediatrics, Ed. Waldo E. Nelson, W. B. Saunders Co. 1979.
6. Anderson, A. S., *et al:* Introduction of mixed feeding in infancy. In: Pediatric Nutrition Handbook. American Academy of Pediatrics, 1979.
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OUR MAN IN EDUCATION

(Continued from page 459)

end of a busy day. Reading for 30 minutes before breakfast would possibly be more productive — I should give it a try.

But back to the issue of change. It seems to be a universal constant universally resisted. Even though every era, every year, seems to be one of especially rapid change, the early 1980's will *surely* be acknowledged by historians as a time of *unusually* large and rapid changes in the history of matters medical . . . won't they? Such changes can be debilitating as well as exhilarating. Mathew Arnold in "The Scholar Gipsy" described the phenomenon with the power of a fine poet's discernment. His words seem not only an observation, but a warning.

What wears out the souls of mortal men?
'Tis that from change to change their being rolls;
'Tis that repeated shocks, again, again,
Exhaust the energy of strongest souls.

August 1985 Morbidity Report

Disease	August 1985 Total	1985 to Date	1984 to Date	Most August Coses Reparted Fram These Caunties
Amebiosis	11	42	52	Scattered
Brucellasis	3	4	1	Marsholl, Tomo
Chickenpax	12	5348	6387	Scottered
Compylabacter	59	218	201	Scattered
Cytomegalavirus	3	7	10	Jahnsan, Linn, Polk
Eoton's Agent infection	0	6	28	
Encepholitis, virol	2	13	20	Allamakee, Pottowottomie
Erythemo infectiosum	0	0	51	
Gastraenteritis (GIV)	34	10123	8759	Scattered
Giardiasis	79	307	210	Scattered
Hepatitis, A	7	33	34	Scattered
Hepatitis, B	7	64	71	Scattered
Hepatitis, Non A-B	0	6	8	
Hepatitis type unspecified	1	12	13	Mahaska
Herpes Simplex	107	735	629	Scattered
Herpes Zoster	0	0	2	
Histoplosmosis	1	15	16	Polk
Infectious mononucleosis	0	105	101	
Influenzo, lob confirmed	0	169	176	
Influenzo-like illness (URI)	97	25092	30804	Scottered
Legionellosis	1	5	3	Lee
Molaria	0	1	1	
Meningitis oseptic	12	29	30	Scottered
bacteriol	8	93	83	Scattered
meningococcal	0	7	21	
Mumps	1	10	19	Polk
Pertussis	0	5	9	
Rabies in animols	14	116	113	Scottered
Reye Syndrome	0	4	2	
Rheumatic Fever	1	2	0	Scott
Rubello (German meosles)	0	1	1	
Measles	0	0	0	
Solmanellosis	43	209	154	Scottered
Shigellosis	4	14	28	Block Howk, Dubuque, Johnson, Palk
Toxic Shock Syndrome	0	5	10	
Tuberculosis tatol ill	2	43	45	Clinton, Mills
bact. pos.	1	40	39	Mills
Typhaid Fever	1	2	0	Apponoose
Venereal diseases: Ganorrheo	422	2902	2938	Scattered
Syphilis	2	17	11	Jasper, Pocahontos

Other Nan-Repartable Diseases: Ascoris — 1, Sioux; Chlomydia — 1, Lucos; Ureoplosmo Ureolyticum — 1, Davis, 2, Dubuque, 8, Johnson, 1, Mohosko, 1, Muscotine, 1, Polk, 1, Woshington; Rotovirus — 1, Polk.

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ABOUT IOWA PHYSICIANS

NEW DOCTORS IN IOWA

Dr. Abdul Q. Sadat to the Medical Clinic, P.C., in Hamburg. Dr. Sadat received his medical education in Kabul, Afghanistan. He came to the United States in 1978; took postgraduate work at St. Barnabas Hospital in New Jersey and had a residency in psychiatry at Western Missouri Mental Health Center in Kansas City.

Dr. Todd Kucera to the Marshalltown Medical & Surgical Center. Dr. Kucera received the M.D. degree at the University of Missouri and had a radiology residency at University Hospitals in Iowa City. . . . **Dr. Michael W. Crane** to the Park Clinic staff in Mason City. Dr. Crane received the M.D. degree at the University of Illinois and had an orthopaedic residency at Blodgett Memorial Medical Center in Grand Rapids, Michigan. . . . **Dr. R. Michael McGill** has joined **Drs. Keevin J. Franzen** and **David M. Kemp** in Dubuque. Dr. McGill received the M.D. degree at the University of Kansas and had his pediatric residency at University of Iowa Hospitals in Iowa City. . . . **Dr. Keith Wright** to Onocology Associates of Cedar Rapids. Dr. Wright received the M.D. degree at the University of Illinois; interned at St. Paul Ramsey Medical Center, St. Paul, Minnesota; had his internal medicine residency

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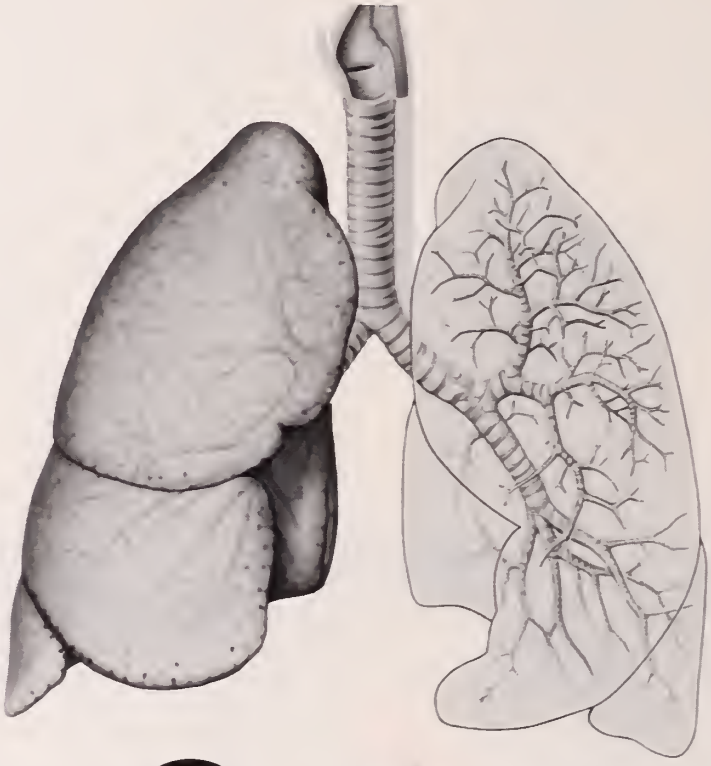
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offers effectiveness against the major causes of bacterial bronchitis

H. influenzae, *H. influenzae*, *S. pneumoniae*, *S. pyogenes*
(ampicillin-susceptible) (ampicillin-resistant)

Brief Summary: Consult the package literature for prescribing information.

Indications and Usage: Ceclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor.

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS (INCLUDING ANAPHYLAXIS) TO BOTH DRUG CLASSES.

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: *General Precautions* – If an allergic reaction to Ceclor® (cefaclor, Lilly) occurs, the drug should be discontinued and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the donor side or on Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Usage in Pregnancy – Pregnancy Category B – Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor® (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers – Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.15, 0.20, 0.21, and 0.15 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children – Safety and effectiveness of this product for use in infants less than one month of age have not been established.

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions, erythema multiforme, or the above skin manifestations accompanied by arthritis, arthralgia, and frequently fever have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain – Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician:

Hepatic – Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic – Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal – Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

Note: Ceclor® (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Carolina, Puerto Rico 00630

and a fellowship in hematology at the University of Minnesota. Prior to locating in Cedar Rapids, Dr. Wright was associated with the Adams Clinic in Hibbling, Minnesota.

Dr. Michael Chandra, Sioux City, has been elected to fellowship in the Scientific Council of the American College of Angiology and the International College of Angiology. A native of the Fiji Islands, Dr. Chandra began his cardiology practice in Sioux City in 1976, following completion of a fellowship at the U. of I. College of Medicine.

Dr. Michael T. Berstler has been named medical staff president at Waverly Municipal Hospital. Other officers are — **Dr. William Hall,** vice president and **Dr. David B. MacMillan,** secretary-treasurer. All are Waverly physicians. . . . **Dr. Sterling J. Laaveg,** Mason City, has been elected a fellow in the American Orthopedic Foot and Ankle Society.

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A Monthly Commentary

IN THE PUBLIC INTEREST

If We Don't, Somebody Will!

IS PHYSICIAN attitude about marketing changing? Here's a report from an administrator of a medical clinic in eastern Iowa to suggest that it is:

Two years ago our clinic tried its first full-scale marketing campaign. We wanted to promote a specialty service the clinic was offering. As part of the project, we purchased radio commercials during the University of Iowa football games. One of our physicians complained rather forcefully; he said he did not appreciate being relegated to the status of a fast food restaurant. Just a few weeks ago (2 years hence), that same physician suggested the clinic should market one of its free community services, possibly with a full-page newspaper ad.

How times change!

Our September *In the Public Interest* discussed expanded marketing among Iowa hospitals. Perhaps to a lesser degree, Iowa's medical clinics are following a similar scenario. The question seems no longer to be *if* but *when* and *how much*.

Competition is motivating this increased marketing by physician clinics and offices — just as it is with hospitals.

"We're not up on a pedestal," says a clinic manager in western Iowa. "We're in competition and we need to roll out the red carpet. Our marketing goal is to get more satisfied patients coming through the door."

"Everyone has their own turf and they're trying to protect it," says a Davenport clinic administrator. Another sums up the marketing emphasis succinctly, "If we don't do it, somebody else will."

Though it appears clinics are not yet marketing/advertising at the same pace as hospitals, efforts in that direction are notable. Several clinics say they are "legitimately budgeting" for marketing; others plan to in the near future. Two eastern Iowa clinics have retained marketing experts to help them plan and execute programs. They have been asked to produce new marketing ideas subject to approval by clinic physicians.

What approaches are being used to put the proverbial *best foot forward?* Various ones. Multi-media advertising. Clinic newsletters. Providing news story ideas to the local media. Informational brochures for new and potential patients. Public service activities emphasizing health education, e.g., blood pressure screening. Many clinics are expanding services and conveniences to patients by extending office hours, by accepting credit cards, etc. Satellite clinics are emerging under a variety of configurations to serve patients more conveniently.

The feelings of staff physicians are a major determinant in marketing activity, stress the clinic administrators. Says one, "When I plan a marketing campaign, two factions must be considered: the audience and the doctors in our group. Many of them are just not used to this."

One western Iowa clinic administrator relates that his physicians are "enthusiastic about community service marketing; but, when it comes to actual advertising, they're a little leery." Another officer manager reports his clinic physicians are "still against" advertising, leaving him to come up with other ways to "get across to the public what we have to offer."

Despite physicians' ambivalence toward marketing and advertising, the notion of clinic administrators is that more budget will be allocated in the coming years.

"I've been in clinic administration for 25 years. I've never seen so much change," one administrator offered. "And there's more change coming."

October 1985

Iowa Medicine

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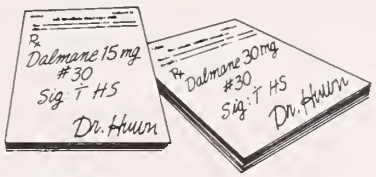
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IowaMedicine
November 1985
Journal of the Iowa Medical Society

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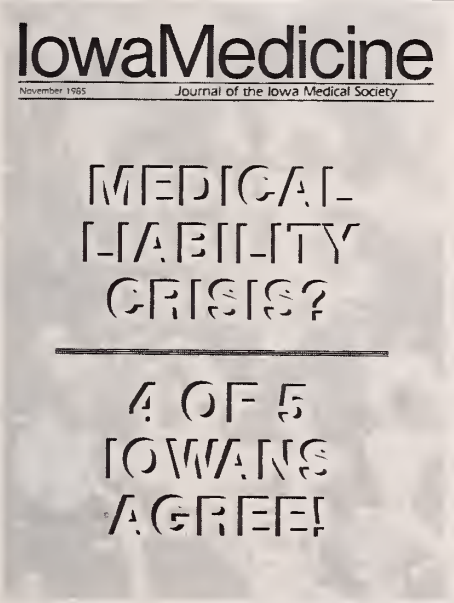
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ABOUT THE COVER — Rank and file Iowans are astute observers of societal conditions. Their opinions are most often on target. A July 1985 survey found 80% of the Iowans asked said there is a growing crisis with malpractice awards and suits in this country. More on what these fellow citizens think about medical liability is found on pages 490 and 491.

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SEEDS OF REFORM ARE SOWN

THE SENSE of purpose was present. The room was full of Iowa physicians. The spirit of commitment was strong. It was a milestone day in the 135-year history of the Iowa Medical Society.

It was October 13, 1985 in Des Moines. The IMS House of Delegates voted enthusiastically to undertake the plan advanced by our Task Force on Medical Liability. Today's impending crisis must be met head on. Everyone agreed.

This issue of IOWA MEDICINE has a further report on the actions of the IMS House of Delegates. Highlights of the medical liability reform plan are provided. By the time you read this, implementation of the program will be well under way.

Also contained in this issue and proclaimed on the cover is information derived from a recent survey of 400 Iowans. These findings support the notion we have that the public is restless over today's medical liability climate and is likely to support a new and improved approach.

One theme dominated on October 13. It was this: Without unity and total resolve by physicians individually, our liability reform program will not succeed. Each of us must be willing to allocate time and energy to bringing a sustained message of honest concern to the public and to members of the Iowa General Assembly.

We have sown the seeds of reform. Now it's time to cultivate their growth.

Emmett B. Mathiasen, M.D.

Emmett B. Mathiasen, M.D.
President







The Seeds Are Sown







THERE IS SOMETHING WRONG with the system when . . .

- Only 30 cents of every $1 awarded in a liability suit goes to the injured patient.
- 15-20% of diagnostic testing comes under the heading of "defensive medicine" and may be of marginal necessity.
- An increasing number of physicians are no longer providing certain services.

There is something wrong with the system, and the Iowa Medical Society is committed to changing it.

On Sunday, October 13, 1985, 120 physician members of the Iowa Medical Society House of Delegates met in special session at the Hotel Savery in Des Moines. In historic deliberations, the delegates unanimously approved an ambitious game plan for reform of Iowa's medical liability system.

The House of Delegates adopted the following resolutions recommended by the IMS Executive Council:

- **Resolved, That the House of Delegates authorize implementation of the comprehensive program set forth in the report of the Task Force on Medical Liability.**
- **Resolved, That the House of Delegates set and approve a specific financial strategy to implement the comprehensive program, including a specified dues assessment.**

In addition, these recommendations from the IMS Board of Trustees were approved by the House of Delegates:

- **The Task Force report be approved as the action plan for addressing the professional liability problem in Iowa. IMS officers are allowed flexibility as they seek implementation of the recommendations and engage in further negotiations.**
- **The Task Force plan is to be implemented at the earliest possible date.**
- **A 1986 special dues assessment of $125 per full dues paying active member is to be implemented at the earliest possible date. Each active member will have until March 1, 1986 to pay this special dues assessment.**
- **An appropriate communication be sent to life members, associate members, resident members and student members encouraging their voluntary financial participation in this special effort.**
- **A membership recruitment letter be sent to all non-members of the IMS encouraging membership plus their voluntary financial participation in the professional liability effort.**

The physician delegates heard remarks from Emmett B. Mathiasen, M.D., Society president and chairman of the IMS Task Force on Medical Liability; Daniel Youngblade, M.D., IMS trustee; Clarence H. Denser, Jr., M.D., Legislative Committee chairman; and Allan Goslin, M.D., trustee, Illinois State Medical Society.

Dr. Mathiasen, in his comments on the Task Force report, said Iowa physicians must be at the forefront of any liability reform effort.

"We must have a total commitment from physicians statewide," he stressed. "Without a commitment by physicians to give of themselves, as well as their dollars, any effort to reform the system will be doomed from the outset."

DR. DENSER, who has led IMS regional legislative briefings around Iowa in October, predicted organized opposition from plaintiff's attorneys will become more intense in the coming months.

"If the activities of the plaintiff's bar to date are any indication, it's going to be a tough fight," he said.

Dr. Denser also cautioned his colleagues that because concentrated effort will be required in the liability area, other issues impor-

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The Iowa terrain has many imperfections within its borders. Of increasingly acute concern is the rocky and uneven soil represented by the medical liability system. Iowa medicine is now planting important seeds for change. We are near the time when physicians, all across the state, must cultivate those seeds which have been sown. The goal is to achieve a worthy harvest wherein Iowans will have an equitable liability system.

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tant to physicians may not receive the attention they otherwise would.

Relevant observations were also heard from Allan Goslin, M.D., veteran of the successful liability reform campaign in Illinois.

"We learned, through preliminary polling, that the public had absolutely no comprehension of the liability crisis," Dr. Goslin related.

Ten of 11 proposed tort reforms were eventually approved by the Illinois legislature, reported Dr. Goslin, because of the unified "grass roots effort" by Illinois physicians. Through one-on-one contacts with citizens and legislators, physicians sounded the message loud and clear that liability is impacting on cost and availability of medical care.

"We went to the public. Our goal was to get people writing or calling legislators saying 'Hey, you've got to do something.'" — Allan Goslin, M.D., trustee, Illinois State Medical Society.

"We went to the public. Our goal was to get people writing or calling legislators saying, 'Hey, you've got to do something,'" he said.

Two hours of intense discussion by the IMS delegates followed keynote speeches. In that discussion, there was clear evidence that physicians are unified in believing the time for change is now. Not one vote was cast in opposition to the program of reform.

Thus, on October 13, the IMS House of Delegates dedicated itself and its constituent physicians to a monumental but achievable task — reform of the medical liability system. A comprehensive plan to accomplish that reform is now in place and operational.

The Iowa Medical Society intends to create a better liability environment in Iowa (1) by strengthening the peer review process, (2) by expanding risk management responsibilities, and (3) by seeking enactment of significant tort reforms.

Major elements of the IMS program include:

- **Expanded risk management activity.**
- **Broadened provisions for assuring quality care through hospital medical staffs, county medical societies and the Board of Medical Examiners, with emphasis on peer review.**
- **Tightened requirements for use of expert witnesses.**
- **Use of pre-trial mechanisms to screen allegations of medical liability.**
- **Application of statutory limits on monetary awards — both totally and for non-economic losses.**
- **Use of periodic payments when awards surpass a specified amount.**
- **Shortened statute of limitations, specifically for minors and mentally ill.**
- **Provision for defendant remedy against unfounded suits.**
- **Collection of specified data by medical liability insurers.**
- **Itemization of awards and provision for uniform jury instructions.**
- **Prohibition against punitive awards as part of judgments or settlements.**
- **Limits on lawyers' contingency fees.**

The medical profession is embarked on a major program to help Iowa citizens better understand the effect archaic liability statutes are having on the availability and cost of medical care. An intensive effort has begun to compile pertinent information for assimilation by the public and the profession.

"Without a commitment by physicians to give of themselves, as well as their dollars, any effort to reform the system will be doomed from the outset." — Emmett B. Mathiasen, M.D., IMS President.

Physician support of and active involvement in the IMS liability campaign is essential. There is much work to be done in the coming months. The task can be accomplished if the Iowa medical profession is unified and dedicated in pursuit of the common goal — a liability system that is fair for everyone.

IMS, IOMA Join Forces

In a special session also held Sunday, October 13, the Iowa Osteopathic Medical Association House of Delegates joined the campaign for liability reform.

IOMA delegates voted unanimous support of the plan, including the special dues assessment of $125 per active member. Reports were made by Keith Hansen, D.O. and Barbara Ohnemus, D.O., osteopathic representatives to the IMS Task Force on Medical Liability.

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'There's A Growing Crisis' Say More and More Iowans

The conditions associated with medical liability are alarming. So say an overwhelming majority of Iowans surveyed in mid-1985. These citizens also agree the money awards are generally excessive. These findings support a strong belief on the part of the Iowa medical profession that it is time to overhaul the legal process as it applies to the medical liability process.

THE ONRUSHING AND VOLATILE medical liability issue is arousing the concern of more and more Iowans. Evidence to support this contention is mounting steadily. Public support for an overhaul of the system is becoming more and more apparent.

Based on a July 1985 survey of 400 randomly selected adult Iowans, 80% of the state's residents agree "there is a growing crisis with malpractice suits and awards in this country." Of the remaining survey respondents, 11.2% said there is no crisis and 8.8% were not sure.

Important Public Recognition

This finding signals important public recognition of the dilemma being enunciated by the Iowa medical profession. Quickly eroding is the perception, pressed by those who stand to gain most from the existing system, that there is no medical liability crisis. Proponents of the status quo contend (a) it's only a pocketbook concern of physicians, (b) it's a matter of insurance companies amassing huge profits at physicians' expense, and (c) it's mushrooming physician negligence — or malpractice. The evidence to sustain these contentions is in short supply.

The mounting dilemma of medical liability is acknowledged by Iowans in an increasing manner. Only 20% of the survey respondents agreed with this statement: People who sue physicians are usually justified in bringing suit. More than half (52.6%) of those Iowans polled said people are just trying to make money. Of the respondents to this inquiry, 27.1% were not sure one way or the other as to the justification for suing.

What Iowans Think About Liability! – About the Growing Crisis

There is a growing crisis with malpractice suits and awards in this country.

Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly	Not Sure
43.0%	37.0%	9.0%	2.2%	8.8%

Awards Are Excessive

Half of the Iowans, when asked if the amount of money awarded in malpractice suits

What Iowans Think About Liability! – About Generous Juries

Do you think the amount of money awarded to patients by juries in malpractice suits is usually too much, not enough, or about right?

Too Much	Not Enough	About Right	Not Sure
50.5%	4.0%	26.2%	19.3%

is too much, too little or about right, said it is excessive.

That there is cause for public apprehension over the amounts of money awarded is supported by various statistical data. For example, Jury Verdict Research of Solon, Ohio, indicates in 1975 the average verdict against a physician was $94,947; by 1983-84, this average had climbed to $338,463. These are calculations based on national experience.

Should There Be A Limit?

What do Iowans think as to the amount of money awarded to plaintiffs? When asked: *Do you think there should be a limit on the amount of money awarded to someone suing a doctor?* More than half (56%) of the respondents answered *yes*. The percentage saying *no* was 27.8%, and the remaining 16.3% was *unsure*. This means nearly three-quarters of the Iowa respondents either favor placing a cap on monetary awards or need a better understanding of the subject before deciding.

Interestingly, when Iowans were asked if the fees charged by lawyers are usually reasonable when related to medicine and health, 70% said they were not; of those so saying, 41.8% were strong in their belief that these fees are excessive.

On the subject of whether doctors make more mistakes than they did 10 years ago, presumably to support the increased frequency of liability claims, 60% of those who answered agreed there is no greater number of mistakes than a decade ago. Just over 10% were not sure about the number of mistakes. Of those who think there are more mistakes, 7.2% believe strongly on the subject and 23.5% are somewhat inclined to think there are more errors.

Access To Care A Concern

Are the inequities and excesses of the medical litigatory process affecting access to quality medical care in Iowa? The answer appears to be *yes*. Twenty percent of Iowa family physicians surveyed recently said they no longer are providing obstetrical services; this means Iowans are having to locate other sources for these important medical needs. It is more and more evident that other physicians are on the brink of deciding the risks and attendant costs are not worth a continuation of certain medical services.

It is noteworthy that our Iowa citizens, as reflected by this 1985 survey, have affirmed the presence of turbulent conditions. The attitudes of these Iowans support the advocacy of change in the litigatory process.

The Iowa Medical Society has initiated a program which seeks to improve legal conditions so that quality medical care can be delivered without fear of undue liability exposure. Yet at the same time, this program assures legal provisions for any victims of actual negligence to be fairly and efficiently compensated. This should be our goal in Iowa.

What Iowans Think About Liability! – About Award Limits

Do you think there should be a limit on the amount of money that can be awarded to someone suing a doctor for malpractice?

Yes	No	Not Sure
55.9%	27.8%	16.3%

What Iowans Think About Liability! – About the Easy Money

Do you think people who sue physicians for malpractice are usually justified in bringing suit or are they just looking for an easy way to make some money?

Usually Justified In Bringing Suit	Just Looking for an Easy Way to Make Money	Not Sure
20.3%	52.6%	27.1%

About The Survey

The data reported here are drawn from an independent nationwide survey conducted by Tarrance and Associates of Houston, Texas. The Iowa findings are based on telephone interviews with 400 randomly selected adult citizens of the state. The public opinion research project is an activity of the American Medical Association.

Questions and Answers — An Interview With David L. Stabenow, M.D. Chairman, IMS Grievance Committee

Avoiding Patient Complaints? Communicate! Communicate!

David L. Stabenow, M.D., has been a member of the Iowa Medical Society Grievance Committee since 1980 and is now its chairman. In describing the work of this Society committee, Dr. Stabenow stresses the importance of patient/physician communication; it's the key, he says, to avoiding complaints. Dr. Stabenow is a dermatologist with Medical Associates in Dubuque, Iowa.

IN THE BYLAWS of the Iowa Medical Society, this passage appears: "The Grievance Committee shall investigate and supervise the ethical deportment of the members of the Society. It shall make periodic recommendations for improvement of professional conduct, and shall prefer and prosecute charges before the appropriate judicial bodies against any physician deemed by the Committee to be guilty of unprofessional conduct."

The following question-and-answer discussion with the chairman of the IMS Grievance Committee is a response to the preceding reference about making recommendations for improvement of professional conduct. The emphasis is placed strongly on the need for good and adequate communications with patients.

Who comprises the Iowa Medical Society Grievance Committee and what is its purpose?

The Grievance Committee consists of one physician member from each councilor district within the Iowa Medical Society. Members are selected by the IMS president from a list of 3 nominees provided by each of the 16 district councilors. Committee members serve a term of 2 years; some have served several terms.

What is the process for submitting a complaint to the Grievance Committee?

Patients who wish to question or complain about the professional conduct of a Society member physician may do so by submitting the particulars in writing through IMS headquarters. Grievances are accepted if the physician in question practices in a county whose medical society does not have a grievance committee or if a county society grievance committee has been unable to resolve the problem.

What happens after a complaint is referred to the IMS Grievance Committee?

Anyone bringing a complaint before the IMS Grievance Committee is contacted by the Committee secretary in writing. The complainant is asked to sign a statement indicating legal action is neither underway nor contemplated on the matter in question. The person is also asked to sign a waiver allowing the Grievance Committee to obtain medical care information from the physician or physicians involved. Without these authorizations, the Committee has no access to privileged doctor/patient communications.

After the Committee has received the signed statement and waiver, the secretary writes to the physician or physicians involved. The physician is sent a copy of the complaint and is

asked to reply in writing to the Committee. Copies of any medical records which bear on the complaint must be attached.

The secretary collects all the written data on each complaint and holds it until the Committee meets. Meetings are scheduled when a sufficient number of grievances are received and documented. Each complaint is fully discussed by Committee members and a consensus is reached on the merits or non-merits. Outlines of replies to the complainant and the physician are formulated. The Committee secretary completes the formal replies and sends them to both parties.

Under unusual circumstances, both parties may be asked to appear before the Committee. In recent years this has seldom proved necessary.

What general types of problems are considered by the Committee?

Complaints brought by patients are varied and too numerous to list in detail. The vast majority, when investigated, turn out to be a failure of physician/patient communication. This may involve the patient not understanding his or her medical condition. It may involve failure of the patient to understand what therapy is available and why the physician chose a specific treatment. It may involve the patient's belief that the physician spent too little time with him or her.

Sometimes a complaint is the result of the patient's inability to understand what is happening despite the best efforts of the physician. Unfortunately, at other times the fault lies with the physician because he or she has not taken the time to carefully talk with the patient and establish a proper rapport.

In past years the Grievance Committee has had a large number of complaints about fees charged by physicians. These complaints have decreased significantly due to the work of the Iowa Foundation for Medical Care. Occasionally we receive such a complaint which the Committee investigates, especially if there appears to be a communication problem between patient and physician over the fee.

The Grievance Committee also receives complaints about the quality of care provided by Iowa physicians. We do not become involved in malpractice situations and do not investigate quality of care complaints. However, the Committee will investigate complaints of this type when there is no threat of a lawsuit and when the problem appears to stem from a lack of communication about appropriateness of care rather than a failure to diagnose or a poor result.

Based on your experience with the IMS Grievance Committee, can you offer specific advice on how physicians can avoid patient complaints?

Most importantly, physicians can better their public images and avoid patient complaints by improving communications with patients; time should always be allowed to communicate thoroughly. The Grievance Committee occasionally investigates a patient/physician relationship which seems hopeless. There are certain patient/physician relationships where the personalities do not lend themselves to successful communication. In the majority of cases, however, a complaint can be avoided through a little extra effort by the physician.

Tips On Patient Communication

- *Discuss Diagnoses and Treatment*
- *Be Thorough*
- *Be Open/Answer Questions*
- *Be Caring*
- *Be Responsive to Concerns*
- *Listen for Criticisms and Take Action*

Physicians are extremely busy people. Like all people, they have likes and dislikes. They tend to delegate tasks to other staff members, especially when those tasks may be unpleasant for the physician. If physicians will carefully discuss diagnoses and possible treatments with their patients, they will find most complaints can be avoided and patients will think more highly of them. An informed patient who has participated in medical care decisions will be less likely to view the physician in an impersonal way.

If, despite the best efforts of the physician, a patient is unhappy about something, the wise

(Please turn to page 504)

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Help Your Patients Kick the Cigarette Habit

KRISTI J. FERGUSON, Ph.D.
PAUL R. POMREHN, M.D., and
RICHARD M. CAPLAN, M.D.
Iowa City

This study surveyed 441 Iowa physicians to determine their current practices with patients who smoke. Almost all (95%) said they advise their smoking patients to stop, although physicians' estimates of their own success varied considerably. Most physicians said they discuss the negative health effects of smoking, but only about one-third provide suggestions for quitting. The authors suggest some patients may respond better to behavior-oriented approaches.

RECENT EVIDENCE[1-3] suggests that physicians can decrease smoking-related morbidity and mortality by counseling their patients to stop smoking. In a large-scale study in Great Britain, Russell and his colleagues[4] concluded that if physicians advise all smokers to stop and achieved a 5% success rate, they could expect to reduce the number of smokers by half a million in one year. These authors argue that while such advice may not increase the success rate among those who attempt to stop smoking, it does increase the number of attempts to stop. Their study also revealed that two-thirds of patients (67%) said "Yes" when asked by a physician, "Are you interested in trying to quit smoking?" Since 85% of adults see their private physicians within a two-year period,[5] most smokers would be advised to stop smoking if physicians sought to counsel patients in this way.

The authors are affiliated with The University of Iowa College of Medicine. Dr. Ferguson is an educational consultant in the Office of Consultation and Research in Medical Education and in the Office of Continuing Medical Education. Dr. Pomrehn is an assistant professor in the Department of Preventive Medicine, and Dr. Caplan is associate dean for Continuing Medical Education.

Even though most physicians want their patients to stop smoking, several studies[6, 7] have demonstrated that physicians are frustrated by their perceived lack of success. Recent developments in the field of behavior change suggest that approaches which help patients stop smoking, such as the provision of self-help materials[4] or referral to smoking cessation programs,[8, 9] may be more effective for some patients than simply warning them about smoking's negative health effects, an approach often used by physicians.

Methods and Results

To determine current practices with smoking patients, this study surveyed 441 physicians who practice in an 11-county area of Iowa. Responses were returned by 94 family

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF NOVEMBER 1985

TABLE 1
PERCENTAGE OF PHYSICIANS WHO "ALWAYS" USE A PARTICULAR TECHNIQUE WHEN COUNSELING SMOKERS

Discuss negotive health effects	65
Provide suggestions for stopping	34
Provide o booklet	9
Refer potient to o smoking cessotion progrom	8
Schedule follow-up	3

practitioners, 38 internists, 20 obstetrician/gynecologists, 14 pediatricians and 21 general surgeons, for a total response rate of 42% from a single mailing. Respondents ranged in age from 29 to 82 years, with a mean of 48 years. Four percent smoked, 36% formerly smoked and 60% had never smoked.

TABLE 2
PERCENTAGE OF PHYSICIANS WHO "MAKE A SPECIAL EFFORT" WITH PATIENT GROUPS (BY PHYSICIAN SPECIALTY)

	Fomily Proctice	*Internol Medicine*	*Ob/ Gyn*	*Pediotrics*	*Surgery*	*Totol*
Prenotol	81	21	90	43	5	58
Hypertensives	72	66	55	0	48	61
High risk for concer	66	66	40	0	43	55
High risk for heort diseose	88	82	55	14	71	76

Almost all physicians (95%) said they advise their smoking patients to stop; most said they spend less than 10 minutes doing so (median = 5 minutes, range = 1-30 minutes). The estimated success level was obtained by dividing the respondent's reported number of patients counseled in the last six months into the reported number who had stopped; this tabulation varied considerably (median = 10%, range = 0-100%). The effort devoted to convincing particular groups of patients to stop smoking varied across specialty groups (Table 2).

Suggestions for Quitting

Physicians frequently discussed negative health effects from smoking (65% did so routinely), although only about one-third (34%) provided suggestions for quitting. Few physicians routinely referred patients to cessation programs (8%), provided a booklet (9%), or scheduled follow-up sessions (3%).

Comments and Recommendations

Although the response rate achieved in this study precludes much generalization, most physicians appear not to be using particularly effective techniques in advising patients to stop smoking. Physicians continue to stress negative health effects of smoking, to the exclusion of concrete advice to help patients stop. Recent studies[1, 4] suggest that even a 5-minute counseling session with specific patient suggestions can be of significant benefit in promoting cessation.

Physicians responsible for primary care, including family practitioners and obstetrician/gynecologists caring for prenatal patients, appear to devote more effort to counseling patients to stop smoking. Even though the questionnaire was not oriented as much for pediatricians as other specialists, some pediatricians did advise mothers of patients not to smoke, emphasizing the effects of smoking on the health of children. The results suggest that pediatricians should be encouraged to take advantage of this opportunity for preventing smoking in their patients.

While the initial medical approach to smokers may vary, depending on the health status of the patient and the responsibilities assumed by the physician, several counseling techniques apply in many situations. The following steps are recommended:

(1) The physician should take a careful smoking history, concentrating on the interest of the patient in trying to stop smoking and his or her experience with any past attempts. The physician can then use this information to advise the patient about overcoming the problems encountered previously.

(2) The physician should recommend that the patient stop smoking. Appropriate reasons specific to the individual should be cited. Concentration should be on any current health problems that may be aggravated by smoking.

(3) The physician can provide self-help materials. Several agencies, such as the National Cancer Institute, will provide such materials free or for a nominal fee.

(4) The physician should ask the patient to set a target date to stop smoking; this date should be noted in the patient's chart and followed up either by phone contact or at subsequent visits.

(5) The physician can recommend that the patient attend a smoking cessation program.

(6) The physician may want to prescribe nicotine chewing gum, now approved by the FDA, as an adjunct to other interventions. Studies have shown that when this product is used with counseling efforts, it may benefit patients who are likely to experience nicotine withdrawal, e.g., those who have experienced symptoms during past attempts to stop smoking or those who smoke more than a pack a day.[10]

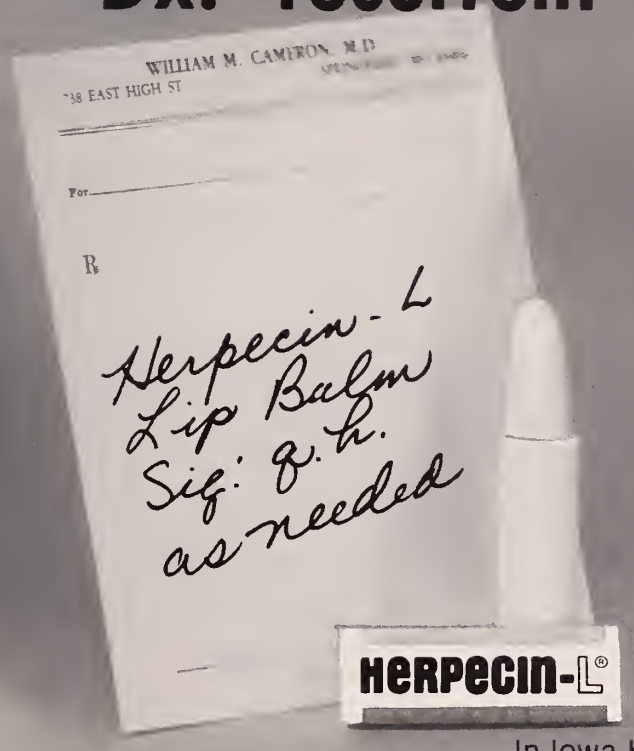
Summary

In summary, physicians can help their patients to stop smoking. They can become more effective by tailoring their advice to the patient's situation, giving specific suggestions on how to stop smoking, and referring patients to available smoking cessation programs.

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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



THANKSGIVING: 1620-1985

TOO OFTEN OUR PRAYERS are those of a beggar. We ask for favor and material gain. Not enough emphasis is given to praise and Thanksgiving. Surely we must take stock of our fortunes at this season of Thanksgiving. Truly the pilgrims had much for which to be thankful in those bleak days of 1620. In the ensuing 365 years each succeeding generation of Americans has had more and more blessings. There has been strife, war, and unrest and depression. Today terrorists harass our citizens and government at will. Yet, the quality of life in the United States surpasses the plight of most peoples. We have freedoms that are unmatched anywhere in the world.

Our profession is likewise blessed. Medicine has reached heights once thought unattainable. Space age technology has provided us diagnostic and treatment possibilities once considered only science-fiction. Our patients have been favored by these skills and life expectancy and quality have been enhanced. Some would argue about consumer and governmental interference, but in reality it is much less than any other country. So, we have much for which to be thankful. It is the wish of the staff of IOWA MEDICINE that our readers have a blessed Thanksgiving. Each of us, regardless of circumstances, have much for which to be thankful.

Thanksgiving Day — the one day that is purely American. In that we may truly rejoice. — M.E.A.

ECONOMICS OF HEALTH CARE

COMPLEX AND BEWILDERING are two milder words used by Iowa physicians to describe the economics of today's health care delivery system. We have government and industry continuing to engulf us. We know, for the most part, the physician has become strictly the vendor. We are finding it more and more challenging to maintain the profession's time-honored altruistic nature.

If your interest in health care economics is more than casual, and hopefully it is, *must* reading for you is a recent article in the NEW ENGLAND JOURNAL OF MEDICINE.* Author Thurow presents both startling data and positive courses of action. Starting with the usual fact that the U.S. spends more of its gross national product on health care than any other country, it points to the availability of these statistics as fodder for those who seek even more restrictive federal edicts on health care delivery. They say the health care burden on government and business is too great to bear on the present scale.

So health care has moved from being a social need to a fiscal concern. Problems of the budget are of greater immediate concern than social or human needs say many who are in positions of control.

The current impact of private corporations on the economics of health care is well known. We have seen their influence and direct involvement alter the traditional health care benefit structure. We are seeing their advocacy of alternate delivery systems take hold. We know

(Please turn to page 500)

* Thurow, Lester C., Medicine versus economics, N Engl J Med 1985;313:611-614.

Historical Vignettes

LOOKING BACK

HOSPITAL VERDICT REVERSED

A VERDICT OF $30,500 received by a bicyclist who was run down and injured by a St. Johns' Hospital, Brooklyn ambulance has been set aside by the Court of Appeals of New York, which finds that the driver of the ambulance was the servant of the keeper of the livery stable, and not of the hospital, and that the hospital therefore was not liable in spite of the fact that a hospital surgeon was in the ambulance at the time, since the latter was not shown to have participated in the driver's negligence. — *Journal of Medical Society of New Jersey*. JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, 1912; VOL 1:568.

In cooperation with the IMS Historical Committee, we are commemorating our 75th anniversary by saluting the past.

COMMENTING EDITORIALLY

(Continued from page 499)

that domestic industry must curtail costs as foreign competition intensifies. Since employee health benefits are a large cost element, they are a logical target for cost containment.

Indeed, cost containment is the in-phrase of our times. Budgetary pressures have forced those corporate entities that pay employee health care benefits to declare that costs must be contained.

Against this backdrop, physicians have the dilemma of their own rising costs. Our bills for vaccine go up. Our employees want increased benefits. Our liability insurance and other overhead escalates. Yet in face of this we are expected to "hold the line" — to keep costs down unrealistically when compared with much of society.

There can be no denying that often times the cost of medical care is substantial. Many techniques of care were unknown a decade or two ago. Admittedly, there are some who take advantage at times where "cost is no object." The federal government has condoned this with its cost-plus philosophy. Several hundred dollars for a hammer may cause a ripple in Congress but a large outlay to save an infant creates a clamor across the nation.

What then are possible solutions? What about gambling? It is now an accepted way of obtaining government revenue. Iowa is well into the lottery business. Why not place a payment limitation on those who disregard good health habits, those who smoke, drink, use drugs, drive recklessly, etc.; why shouldn't these individuals have reduced health care benefits? Obviously, this is not the answer; all sick and impaired deserve medical care of equal caliber, but it does constitute food for thought when we think of the billions of dollars spent for health care.

Thurow offers his proposals. He refers to tiers of health care quality: government, corporate and private. These 3 tiers represent a market wherein the buyer (payor) is set up against the seller (provider). In government and corporate markets the buyer will dominate; in a free-market individual health care system, the providers will maintain traditional dominance.

One approach is to convert American physicians to a practice style called competent conservatism. This changes medical philosophy from "do no harm" to "employ a treatment only when you are sure it will make a noticeable improvement." Heroic measures would be used only when there is a high probability of success.

These comments will do little more than raise your curiosity. Read Thurow's article; it will enlighten you. The pointed question he asks is this: "The time for change is here. Can the medical community systematically change its practice style to encourage the least costly alternatives? I don't know. That is a question for the medical community itself to answer."

"Similar attitudinal changes will be required within the larger society." The sooner that is realized the more rational decisive action can occur. — M.E.A.

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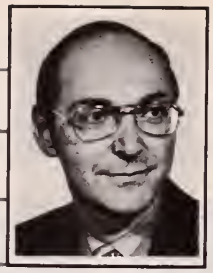
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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



BIOLOGICAL CONTROL OF ZEST AND JOY

EDUCATION, as one definition would have it, is the enterprise by which a society transmits its culture from one generation to the next. Any abstraction so vast as "education" will naturally be definable in many ways; this one, of course, has an anthropological flavor to it through its use of the words "society" and "culture," which themselves may need defining if one were to pursue that path much further.

I happened to recall that particular definition when I chanced upon another that was embedded in an essay entitled "Education and Discipline," contained in a volume of miscellaneous essays published in 1935 by the great mathematician-philosopher, Bertrand Russell. The series, *In Praise of Idleness,* was named for the first essay in the collection. I was first attracted to it out of my high regard for that fiercely independent and eccentric Briton, whose book *History of Western Philosophy* had once taught me a great deal when I was taking a survey course in philosophy. The second point of my attraction arose from the hope that the title essay might offer a bit of justification for the few days of vacation I had just begun. Perhaps I thought I could use the vacation to write a little piece entitled "How to Make a Type B out of a Type A," something akin to the problem of the silk purse and the sow's ear. (I failed, of course.) But the essays of Russell were a delight to read for their clarity, persuasiveness and sheer beauty of precise expression. So it was in "Education and Discipline" that I found this:

. . .[T]he purpose of education is civilisation, a term which, as I mean it, has a definition which is partly individual, partly social. It consists, in the individual, of both intellectual and moral qualities: intellectually, a certain amount of general knowledge, technical skill in one's own profession, and a habit of forming opinions on evidence; morally, of impartiality, kindliness, and a modicum of self-control. I should add a quality which is neither moral nor intellectual, but perhaps physiological: zest and joy of life. In communities, civilisation demands respect for law, justice as between man and man, purposes not involving permanent injury to any section of the human race, and intelligent adaptation of means to ends.

What a beautifully organized statement, as tidy as a geometrical proof. One could probably build a full-semester course on educational theory just by expanding, phrase by phrase, on its meaty significance. The biological side of me sparks to the challenge of whether zest and joy of life are "perhaps physiological." Like so many other characteristics of "personality" (that is, mental-emotional attributes) they seem undeniably to exist to a degree that varies from some folks who mope along with almost no joy or zest, to others who bounce merrily through a life of seeming good cheer.

YET I KNOW OF no anatomical site that controls for zest and joy of life. Well, there's a chance that one might turn up. After all, not too many years ago we all thought the pituitary was the organ of ultimate control that elaborated hormones for a variety of useful purposes, and it turns out that it largely responds to instructions sent to it from a nearby area in the hypothalamus that elaborates releasing-

(Please turn to page 504)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

ALZHEIMER'S DEMENTIA

Cure of the disease is still out of reach. In as devastating a condition as this, even the most modest relief of symptoms—or for that matter keeping them from getting worse or merely slowing their intensification—is a great contribution to patient and family.

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Use of HYDERGINE therapy should be continually reviewed, since presenting clinical picture may evolve to allow specific diagnosis and specific alternative treatment, and to determine whether any initial benefit persists. Modest but statistically significant changes observed at the end of twelve weeks of therapy include: mental alertness, confusion, recent memory, orientation, emotional lability, self-care, depression, anxiety/fears, cooperation, sociability, appetite, dizziness, fatigue, bothersome(ness), and overall impression of clinical status.

Contraindications: Hypersensitivity to the drug; psychosis, acute or chronic, regardless of etiology.

Precautions: *Because the target symptoms are of unknown etiology, careful diagnosis should be attempted before prescribing HYDERGINE (ergoloid mesylates) preparations.*

Adverse Reactions: Serious side effects have not been found. Some transient nausea and gastric disturbances have been reported, and sublingual irritation with the sublingual tablets.

Dosage and Administration: 1 mg three times daily. Alleviation of symptoms is usually gradual and results may not be observed for 3-4 weeks.

How Supplied: HYDERGINE LC (liquid capsules); 1 mg, oblong, off-white, branded "HYDERGINE LC 1 mg" on one side, "Ⓢ" other side. Packages of 100 and 500. (Encapsulated by R. P. Scherer, N.A., Clearwater, Florida 33518).

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QUESTIONS AND ANSWERS

(Continued from page 493)

physician will openly discuss the problem with that patient. Delegating this responsibility to one's staff only increases the likelihood the patient will conclude the physician does not care. In my opinion, patients above all want their physicians to care about them. Most patients do not expect every medical situation to end ideally; they do expect to be treated by caring physicians. The best way to show them we care is to take time to communicate with them.

Do you see the Grievance Committee as having a positive influence on the profession as it addresses today's difficult medical liability circumstances?

I believe the Grievance Committee can have a positive influence on the medical liability problem of Iowa physicians. I certainly do not believe we can eliminate the problem. Our Committee has little control over physicians who practice medicine poorly from a scientific standpoint. We have no control over persons who view certain situations as an opportunity to achieve instant wealth.

We can try to improve the rapport between physicians and patients. It has been repeatedly shown patients are more likely to institute liability actions if they have a poor relationship with their physician. Physicians who communicate thoroughly with patients and seek to improve their communications will decrease their likelihood of being sued.

OUR MAN IN EDUCATION

(Continued from page 502)

hormones into the pituitary. Maybe one of these days another area will be discovered to produce hormones that release the releasing hormones of the hypothalamus. Biological control mechanisms are enthralling, for their complexity and their elegance (and their tendency to lead to an infinite regress). If I were to be so bold as to speculate on the existence of an anatomical locus that regulates zest and joy of life, and you happen to be the one who finds it, I publicly grant you permission to name it after me.

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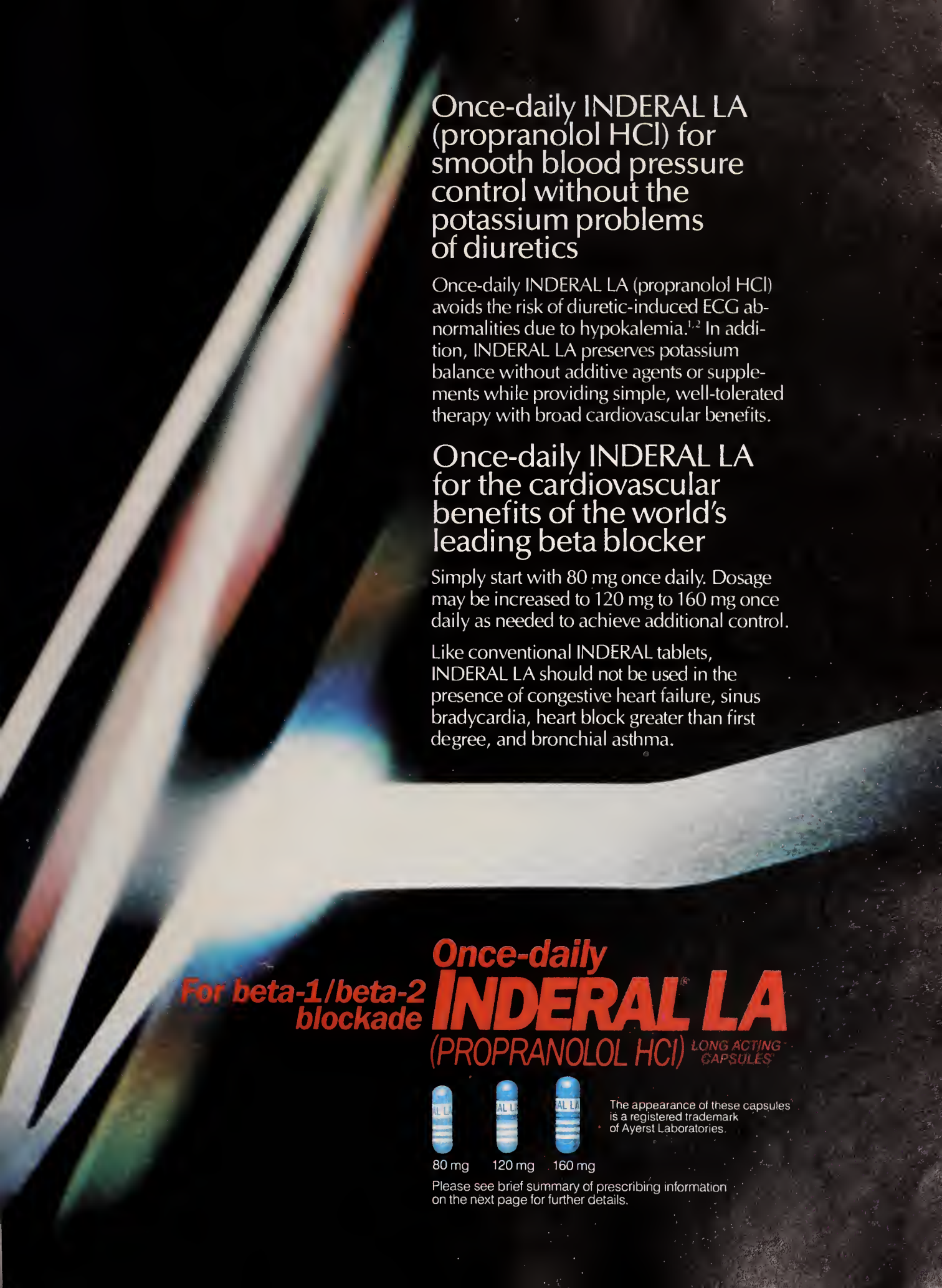
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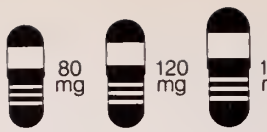
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Please see brief summary of prescribing information on the next page for further details.

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BRIEF SUMMARY *(FOR FULL PRESCRIBING INFORMATION, SEE PACKAGE CIRCULAR.)*

INDERAL® LA brand of propranolol hydrochloride **(Long Acting Capsules)**

DESCRIPTION. Inderal LA is formulated to provide a sustained release of propranolol hydrochloride. Inderal LA is available as 80 mg, 120 mg, and 160 mg capsules.

CLINICAL PHARMACOLOGY. INDERAL is a nonselective beta-adrenergic receptor blocking agent possessing no other autonomic nervous system activity. It specifically competes with beta-adrenergic receptor stimulating agents for available receptor sites. When access to beta-receptor sites is blocked by INDERAL, the chronotropic, inotropic, and vasodilator responses to beta-adrenergic stimulation are decreased proportionately.

INDERAL LA Capsules (80, 120, and 160 mg) release propranolol HCl at a controlled and predictable rate. Peak blood levels following dosing with INDERAL LA occur at about 6 hours and the apparent plasma half-life is about 10 hours. When measured at steady state over a 24-hour period the areas under the propranolol plasma concentration-time curve (AUCs) for the capsules are approximately 60% to 65% of the AUCs for a comparable divided daily dose of INDERAL tablets. The lower AUCs for the capsules are due to greater hepatic metabolism of propranolol, resulting from the slower rate of absorption of propranolol. Over a twenty-four (24) hour period, blood levels are fairly constant for about twelve (12) hours then decline exponentially.

INDERAL LA should not be considered a simple mg for mg substitute for conventional propranolol and the blood levels achieved do not match (are lower than) those of two to four times daily dosing with the same dose. When changing to INDERAL LA from conventional propranolol, a possible need for retitration upwards should be considered especially to maintain effectiveness at the end of the dosing interval. In most clinical settings, however, such as hypertension or angina where there is little correlation between plasma levels and clinical effect, INDERAL LA has been therapeutically equivalent to the same mg dose of conventional INDERAL as assessed by 24-hour effects on blood pressure and on 24-hour exercise responses of heart rate, systolic pressure and rate pressure product. INDERAL LA can provide effective beta blockade for a 24-hour period.

The mechanism of the antihypertensive effect of INDERAL has not been established. Among the factors that may be involved in contributing to the antihypertensive action are (1) decreased cardiac output, (2) inhibition of renin release by the kidneys, and (3) diminution of tonic sympathetic nerve outflow from vasomotor centers in the brain. Although total peripheral resistance may increase initially, it readjusts to or below the pretreatment level with chronic use. Effects on plasma volume appear to be minor and somewhat variable. INDERAL has been shown to cause a small increase in serum potassium concentration when used in the treatment of hypertensive patients.

In angina pectoris, propranolol generally reduces the oxygen requirement of the heart at any given level of effort by blocking the catecholamine-induced increases in the heart rate, systolic blood pressure, and the velocity and extent of myocardial contraction. Propranolol may increase oxygen requirements by increasing left ventricular fiber length, end diastolic pressure and systolic ejection period. The net physiologic effect of beta-adrenergic blockade is usually advantageous and is manifested during exercise by delayed onset of pain and increased work capacity.

In dosages greater than required for beta blockade, INDERAL also exerts a quinidine-like or anesthetic-like membrane action which affects the cardiac action potential. The significance of the membrane action in the treatment of arrhythmias is uncertain.

The mechanism of the antimigraine effect of propranolol has not been established. Beta-adrenergic receptors have been demonstrated in the pial vessels of the brain.

Beta receptor blockade can be useful in conditions in which, because of pathologic or functional changes, sympathetic activity is detrimental to the patient. But there are also situations in which sympathetic stimulation is vital. For example, in patients with severely damaged hearts, adequate ventricular function is maintained by virtue of sympathetic drive which should be preserved. In the presence of AV block, greater than first degree, beta blockade may prevent the necessary facilitating effect of sympathetic activity on conduction. Beta blockade results in bronchial constriction by interfering with adrenergic bronchodilator activity which should be preserved in patients subject to bronchospasm.

Propranolol is not significantly dialyzable.

INDICATIONS AND USAGE. Hypertension: INDERAL LA is indicated in the management of hypertension, it may be used alone or used in combination with other antihypertensive agents, particularly a thiazide diuretic. INDERAL LA is not indicated in the management of hypertensive emergencies.

Angina Pectoris Due to Coronary Atherosclerosis: INDERAL LA is indicated for the long-term management of patients with angina pectoris.

Migraine: INDERAL LA is indicated for the prophylaxis of common migraine headache. The efficacy of propranolol in the treatment of a migraine attack that has started has not been established and propranolol is not indicated for such use.

Hypertrophic Subaortic Stenosis: INDERAL LA is useful in the management of hypertrophic subaortic stenosis, especially for treatment of exertional or other stress-induced angina, palpitations, and syncope. INDERAL LA also improves exercise performance. The effectiveness of propranolol hydrochloride in this disease appears to be due to a reduction of the elevated outflow pressure gradient which is exacerbated by beta-receptor stimulation. Clinical improvement may be temporary.

CONTRAINDICATIONS. INDERAL is contraindicated in 1) cardiogenic shock, 2) sinus bradycardia and greater than first degree block, 3) bronchial asthma, 4) congestive heart failure (see WARNINGS) unless the failure is secondary to a tachyarrhythmia treatable with INDERAL.

WARNINGS. CARDIAC FAILURE. Sympathetic stimulation may be a vital component supporting circulatory function in patients with congestive heart failure, and its inhibition by beta blockade may precipitate more severe failure. Although beta blockers should be avoided in overt congestive heart failure, if necessary, they can be used with close follow-up in patients with a history of failure who are well compensated and are receiving digitalis and diuretics. Beta-adrenergic blocking agents do not abolish the inotropic action of digitalis on heart muscle.

IN PATIENTS WITHOUT A HISTORY OF HEART FAILURE, continued use of beta blockers can, in some cases, lead to cardiac failure. Therefore, at the first sign or symptom of heart failure, the patient should be digitalized and/or treated with diuretics, and the response observed closely, or INDERAL should be discontinued (gradually, if possible).

IN PATIENTS WITH ANGINA PECTORIS, there have been reports of exacerbation of angina and, in some cases, myocardial infarction, following abrupt discontinuance of INDERAL therapy. Therefore, when discontinuance of INDERAL is planned the dosage should be gradually reduced over at least a few weeks, and the patient should be cautioned against interruption or cessation of therapy without the physician's advice. If INDERAL therapy is interrupted and exacerbation of angina occurs, it usually is advisable to reinstitute INDERAL therapy and take other measures appropriate for the management of unstable angina pectoris. Since coronary artery disease may be unrecognized, it may be prudent to follow the above advice in patients considered at risk of having occult atherosclerotic heart disease who are given propranolol for other indications.

Nonallergic Bronchospasm (e.g., chronic bronchitis, emphysema)—PATIENTS WITH BRONCHOSPASTIC DISEASES SHOULD IN GENERAL NOT RECEIVE BETA BLOCKERS. INDERAL should be administered with caution since it may block bronchodilation produced by endogenous and exogenous catecholamine stimulation of beta receptors.

MAJOR SURGERY. The necessity or desirability of withdrawal of beta-blocking therapy prior to major surgery is controversial. It should be noted, however, that the impaired ability of the heart to respond to reflex adrenergic stimuli may augment the risks of general anesthesia and surgical procedures.

INDERAL (propranolol HCl), like other beta blockers, is a competitive inhibitor of beta-receptor agonists and its effects can be reversed by administration of such agents, e.g., dobutamine or isoproterenol. However, such patients may be subject to protracted severe hypotension. Difficulty in starting and maintaining the heartbeat has also been reported with beta blockers.

DIABETES AND HYPOGLYCEMIA. Beta-adrenergic blockade may prevent the appearance of certain premonitory signs and symptoms (pulse rate and pressure changes) of acute hypoglycemia in labile insulin-dependent diabetes. In these patients, it may be more difficult to adjust the dosage of insulin.

THYROTOXICOSIS. Beta blockade may mask certain clinical signs of hyperthyroidism. Therefore, abrupt withdrawal of propranolol may be followed by an exacerbation of symptoms of hyperthyroidism, including thyroid storm. Propranolol does not distort thyroid function tests.

IN PATIENTS WITH WOLFF-PARKINSON-WHITE SYNDROME, several cases have been reported in which, after propranolol, the tachycardia was replaced by a severe bradycardia requiring a demand pacemaker. In one case this resulted after an initial dose of 5 mg propranolol.

PRECAUTIONS. *General:* Propranolol should be used with caution in patients with impaired hepatic or renal function. INDERAL (propranolol HCl) is not indicated for the treatment of hypertensive emergencies.

Beta adrenoreceptor blockade can cause reduction of intraocular pressure. Patients should be told that INDERAL may interfere with the glaucoma screening test. Withdrawal may lead to a return of increased intraocular pressure.

Clinical Laboratory Tests. Elevated blood urea levels in patients with severe heart disease, elevated serum transaminase, alkaline phosphatase, lactate dehydrogenase.

DRUG INTERACTIONS. Patients receiving catecholamine-depleting drugs such as reserpine should be closely observed if INDERAL is administered. The added catecholamine-blocking action may produce an excessive reduction of resting sympathetic nervous activity which may result in hypotension, marked bradycardia, vertigo, syncopal attacks, or orthostatic hypotension.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies in animals have been conducted to evaluate toxic effects and carcinogenic potential. In 18-month studies in both rats and mice, employing doses up to 150 mg/kg/day, there was no evidence of significant drug-induced toxicity. There were no drug-related tumorigenic effects at any of the dosage levels. Reproductive studies in animals did not show any impairment of fertility that was attributable to the drug.

Pregnancy. Pregnancy Category C. INDERAL has been shown to be embryotoxic in animal studies at doses about 10 times greater than the maximum recommended human dose. There are no adequate and well-controlled studies in pregnant women. INDERAL should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. INDERAL is excreted in human milk. Caution should be exercised when INDERAL is administered to a nursing woman.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS. Most adverse effects have been mild and transient and have rarely required the withdrawal of therapy.

Cardiovascular: bradycardia; congestive heart failure; intensification of AV block; hypotension; paresthesia of hands; thrombocytopenic purpura; arterial insufficiency, usually of the Raynaud type.

Central Nervous System: lightheadedness; mental depression manifested by insomnia, lassitude, weakness, fatigue; reversible mental depression progressing to catatonia; visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place; short-term memory loss; emotional lability; slightly clouded sensorium; and decreased performance on neuropsychometrics.

Gastrointestinal: nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, mesenteric arterial thrombosis, ischemic colitis.

Allergic: pharyngitis and agranulocytosis; erythematous rash; fever combined with aching and sore throat; laryngospasm and respiratory distress.

Respiratory: bronchospasm.

Hematologic: agranulocytosis; nonthrombocytopenic purpura; thrombocytopenic purpura.

Auto-Immune: In extremely rare instances, systemic lupus erythematosus has been reported.

Miscellaneous: alopecia; LE-like reactions; psoriasiform rashes; dry eyes; male impotence; and Peyronie's disease have been reported rarely. Oculomucocutaneous reactions involving the skin, serous membranes and conjunctivae reported for a beta blocker (practolol) have not been associated with propranolol.

DOSAGE AND ADMINISTRATION. INDERAL LA provides propranolol hydrochloride in a sustained-release capsule for administration once daily. If patients are switched from INDERAL tablets to INDERAL LA capsules, care should be taken to assure that the desired therapeutic effect is maintained. INDERAL LA should not be considered a simple mg for mg substitute for INDERAL. INDERAL LA has different kinetics and produces lower blood levels. Retitration may be necessary especially to maintain effectiveness at the end of the 24-hour dosing interval.

HYPERTENSION—*Dosage must be individualized.* The usual initial dosage is 80 mg INDERAL LA once daily, whether used alone or added to a diuretic. The dosage may be increased to 120 mg once daily or higher until adequate blood pressure control is achieved. The usual maintenance dosage is 120 to 160 mg once daily. In some instances a dosage of 640 mg may be required. The time needed for full hypertensive response to a given dosage is variable and may range from a few days to several weeks.

ANGINA PECTORIS—*Dosage must be individualized.* Starting with 80 mg INDERAL LA once daily, dosage should be gradually increased at three to seven day intervals until optimum response is obtained. Although individual patients may respond at any dosage level, the average optimum dosage appears to be 160 mg once daily. In angina pectoris, the value and safety of dosage exceeding 320 mg per day have not been established.

If treatment is to be discontinued, reduce dosage gradually over a period of a few weeks (see WARNINGS).

MIGRAINE—*Dosage must be individualized.* The initial oral dose is 80 mg INDERAL LA once daily. The usual effective dose range is 160-240 mg once daily. The dosage may be increased gradually to achieve optimum migraine prophylaxis. If a satisfactory response is not obtained within four to six weeks after reaching the maximum dose, INDERAL LA therapy should be discontinued. It may be advisable to withdraw the drug gradually over a period of several weeks.

HYPERTROPHIC SUBAORTIC STENOSIS—80-160 mg INDERAL LA once daily.

PEDIATRIC DOSAGE—At this time the data on the use of the drug in this age group are too limited to permit adequate directions for use.

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Recent Highlights

U. OF I. COLLEGE OF MEDICINE

UI OTOLARYNGOLOGISTS *in the College of Medicine have received a $2.6 million federal grant to evaluate cochlear electrode implants. The 5-year grant will help* ***Brian McCabe*** *and* ***Bruce Gantz*** *determine how each of the various available cochlear implants perform by comparison, and which implant is the best for each patient. Candidates for the clinical trials, in which medical costs of the cochlear implant will be paid from the grant, must be profoundly deaf in both ears, receive no benefit from a hearing aid, have language skills of at least a 10-year-old, and be at least 18. First of its kind, the study is funded by the National Institute of Neurologic Communicative Disorders and Stroke of the National Institutes of Health.*

JOHN A. D. COOPER, PRESIDENT *of the Association of American Medical Colleges and lecturer at Georgetown University, addressed an overflow audience of faculty and students in the Medical Alumni Auditorium Sept. 23. He was critical of economic and governmental forces leading to the commercialization of medicine and patients being turned into "consumers," and the effect of such forces on medical education. A nationally recognized leader in medical education, community medicine and international health, Cooper has been president of the AAMC since 1969. He was chosen one of the most influential leaders in the field of health for five consecutive years by the editors of U.S. News & World Report.*

JANET SCHLECHTE, *Internal Medicine, is the recipient of a $392,691 grant for a study seeking clues to the prevention and treatment of osteoporosis. With co-investigators* ***George El-Khoury*** *and* ***Mary Kathol*** *of the UI Radiology department, she will use a CT scanner to measure rates of spinal bone loss in young women. Women who have high levels of prolactin and absent menstrual cycles may be at risk for the premature development of osteoporosis. Designed to determine whether these hormonal factors are associated with an accelerated rate of bone loss, the UI study will include women with no medical problems as well as those with pituitary tumors.*

FAMILY PRACTICE RESIDENTS FROM IOWA'S *Statewide Family Practice Training Program met with representatives from 53 Iowa communities at the ninth annual Iowa Family Practice Opportunities Fair, held Aug. 17 in Des Moines. Some 60 new physicians seeking practice locations toured the displays, each of which portrayed the features of its community and was staffed by local representatives. Such fairs are credited with helping the Family Practice Training Program retain more than 60 percent of its graduates for Iowa practices, with half of these locating in communities with populations under 10,000. The event was sponsored by the Iowa Family Practice Residents Council, with co-sponsorship by the University of Iowa College of Medicine, the Iowa Medical Society and the Iowa Academy of Family Physicians.*

AT-A-GLANCE . . . Charles D. Phelps, *head of Ophthalmology in the UI College of Medicine and University Hospitals, died of cancer Sept. 13 at the age of 47. Phelps was recognized internationally for his research on glaucoma . . .* ***Jean Jew,*** *Anatomy, has been invited to speak at the International Colloquium on Nervous Transmissions to be held next year in Heidelberg, West Germany . . . The UI Department of Internal Medicine held its second annual conference on "Progress in Internal Medicine" Sept. 26 and 27. The conference addressed recent advances in infectious diseases, pulmonary medicine, endocrinology and rheumatology.*

This report has been compiled by the University of Iowa Health News Service.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

THE DRUG TREATMENT OF MODERATE AND SEVERE PAIN SYNDROMES IN CANCER PATIENTS

PAIN IS ONE OF THE MOST feared consequences of malignancy and often adversely affects the quality of life of its victims and their families. During their illness, the majority of patients with cancer will suffer pain. Its occurrence is related to both the extent of disease and the sites of metastatic involvement with bone metastases generally being most painful.[1]

The cause of cancer-related pain is multifactorial.[2] Compression or direct invasion of bone, nerve, or other organs by the expanding tumor mass may result in pain. There may be painful obstruction of a hollow viscus or occlusion of blood vessels. Patients may experience pain as a consequence of diagnostic or therapeutic procedures.

Despite efforts to palliate cancer patients with anticancer therapy (chemotherapy, radiation therapy, or surgical decompression), a substantial number of patients will still require analgesics. Effective analgesic management is thus an essential part of the care of oncologic patients.

Peripherally acting antipyretic and nonsteroid anti-inflammatory agents are useful for mild pain. Cancer patients with moderate or severe pain syndromes require narcotic analgesics; the physician must select from the wide variety of these agents available.[3, 4] Meperidine has a relatively short duration of action and metabolites with central nervous system toxicity accumulate with repetitive dosing. Methadone has good bioavailability when administered orally; but because of its relatively long half-life (up to 60 hours in some patients), cumulative CNS toxicity is a problem in many patients. Heroin undergoes rapid biotransformation to morphine in vivo. It has a slightly more rapid onset of action than morphine, but has not been shown to be superior to morphine in controlled trials for pain relief in patients with chronic cancer pain. Mixed agonists/antagonists, such as pentazocine, can precipitate an acute withdrawal syndrome in patients with previous narcotic exposure and have psychomimetic side effects. Morphine sulfate (MS) is the prototype agonist narcotic analgesic. In terms of analgesic efficacy, duration of action, and ease of administration, no other preparation has been shown to be superior. Morphine will afford excellent pain relief in the majority of patients.

The goal of analgesic therapy is to achieve continuous suppression of pain. This requires administration of analgesics on a regular basis, the next dose being given before the previous one has worn off. Such a program erases the memory and fear of pain, as well as eliminating the anxiety associated with its anticipated return.

Fear of addiction or belief that tolerance will prevent adequate pain relief in the future often leads patients to delay morphine doses until the pain is unbearable. Fixed schedules with an adequate explanation from the physician lead to more effective pain management with

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

smaller total doses of MS because pain is kept at a lower intensity. On a q 4-hour dose schedule, patients either have to wake themselves for a dose or run the risk of waking during the night with pain or in the morning with pain. A new sustained-release morphine preparation provides sustained blood levels for 8 to 12 hours and requires only BID or TID doses. These sustained-release preparations more readily allow a fixed schedule with sustained blood levels, obviate nighttime doses, and provide similar pain relief to q 4-hour morphine solution. This review will focus on MS and the role for the new sustained-release preparations.

Pharmacokinetics

Morphine sulfate (MS) acts centrally on endogenous opiate receptors and alters both the perception of and reaction to pain. There is no defined correlation between analgesic efficacy and plasma levels of the drug. It exerts its analgesic effects over a wide dosage range. At higher doses, side effects (particularly respiratory depression) become dose limiting. MS can be administered intravenously, intramuscularly, or orally. The pharmacokinetics depend somewhat on the route of administration.[6]

Following IV administration, MS has very rapid onset of action. It circulates about 33% protein-bound, primarily to albumin, and is metabolized by the liver, primarily to the glucuronide conjugate. This and small amounts of free MS are then excreted by the kidney accounting for disposition of most of the drug, which occurs with a half-life of 2 to 4 hours. Although some trace of MS is present in the urine at 24 hours, 90% of the total excretion occurs during the first day. There is some enterohepatic circulation. Seven to 10% of the dose appears in the feces. With IM administration, the peak concentration and onset of analgesia are slightly slower than with the intravenous route, otherwise the pharmacokinetics are similar.

Because of extensive first-pass metabolism by the liver, the bioavailability of oral MS is substantially less than when the drug is given by a parenteral route. There is a very considerable interindividual variation in absorption and bioavailability of oral morphine products. An oral-parenteral potency ratio of about 1:6 has been described for single doses of MS.

TABLE I

	IV	IM	Oral Elixir	Oral Sustained-Release Tablets
Time to peak concentration	immediate	10-20 minutes	0.8 hours	2-5 hours
Half-life (absorption)			0.45 hours	0.81 hours
Half-life (elimination)	2-4 hours	2-4 hours	2-4 hours	2-4 hours
Bioavailability	100%	100%	15-30%	15-30%

However, when given in repeated oral dose, MS is more potent, with an oral-parenteral potency ratio of about 1:3.[7] The time to peak concentration and onset of analgesia are also delayed, occurring at slightly less than one hour. Metabolism and elimination half-life are both the same as for the parenterally administered drug.

Controlled-release tablets of MS are commercially available in the United States. Because of its formulation in a cellulose-containing matrix, the absorption phase of the drug is significantly prolonged. The peak concentration is delayed and plasma levels are sustained for 8 to 12 hours. Analgesic effect is similarly sustained, making this preparation more useful for chronic rather than acute pain. Once absorbed, the metabolism and elimination are the same as for other routes of administration.

Side Effects

The primary site of action of all the opioid analgesics, including MS, is the central nervous system (CNS). They can cause sedation and drowsiness and potentiate the effects of other CNS depressants. At higher doses, coma can occur. Due to effects on brainstem function, a dose-dependent respiratory depression is seen and is almost always the cause of death in narcotic overdoses. Respiratory depression with carbon dioxide retention may result in cerebral vasodilation with increased intracranial pressure. This is of particular concern in patients with intracranial malignant disease. However, the pain experienced by cancer patients tends to counteract this side effect. MS can be administered, even by IV infusion, to patients with preexisting lung or liver disease

(Please turn to page 508)

(Continued from page 507)

provided the patient's vital signs and mental status are closely monitored and doses appropriately titrated.[9] The CNS depressant effect of MS can also be countered by the administration of dextroamphetamine.[10]

Nausea and vomiting are frequent in patients receiving MS. There may be a central vestibular component to these symptoms since they occur more frequently in ambulatory patients. Antiemetics, including antihistamines and phenothiazines, are useful as treatment.

Because peristaltic, smooth-muscle contractions in the intestinal wall and intestinal secretions are both inhibited by MS, virtually all patients on chronic narcotic therapy suffer from constipation and dry, hard stools. These patients should begin a program of regular stool softeners and laxatives at the same time that their narcotic treatment is begun.

Drug dependence is a predictable event in the course of chronic narcotic therapy. This is generally of little concern in patients with painful, terminal diseases. Addiction, characterized by compulsive, drug-seeking behavior and continued narcotic craving, is decidedly rare in cancer patients.[1]

Of more concern in this patient population is the development of tolerance. This appears in an unpredictable fashion, not at all in some patients and results in a gradually increasing dose requirement of narcotic to achieve adequate pain relief. Sudden changes in pain due to this mechanism are unusual and should suggest some complication or progression of the underlying disease. Tolerance may be overcome simply by increasing the dose of narcotic administered. Because cross tolerance among the various narcotic analgesics is incomplete, some benefit may also be gained by switching to a different preparation at less than an equianalgesic dose.

Clinical Trials

The analgesic efficacy of MS has been demonstrated in numerous clinical trials. Kaiko *et al.* looked at 715 cancer patients with chronic

(Please turn to page 510)



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See following page for brief summary of prescribing information.

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Please consult full prescribing information before use. A summary follows:

INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle, therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg, for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg, and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg), Chewable Tablets (5, 10 mg), Oral Tablets (5, 10, 20, 30, 40 mg), Sustained Action Tablets (40 mg).

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DRUG THERAPY REVIEW

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pain who were given IM MS.[11] They found enormous individual variations in blood levels and analgesic efficacy emhasizing the need for careful dose titration in any given patient. They also noted a lower dose requirement in elderly patients. This group of older patients, in whom cancer is common, may be more sensitive to both the analgesic and adverse effects of narcotics.

Investigation of controlled-release MS has recently been reported in patients with cancer pain. Walsh studied 30 patients receiving every 4 hours doses of MS elixir.[12] They were randomized to continue that treatment, or to switch to controlled-release MS given twice daily. The total 24-hour dose was the same with both preparations. The patients were crossed over twice to the alternative medication. Over the course of the 10-day study, there was no difference in analgesic efficacy or side effects as judged by the patients themselves or the staff.

Hanks and Trueman reported similar results in 11 patients who completed a 5-day trial.[13] In a retrospective, uncontrolled report on the experience with sustained-release MS at a London hospice over 600 patients received up to 150 mg of sustained-release MS twice daily with good results.[14]

Although controlled-release MS appears to be efficacious and convenient, its use has been associated with prolonged respiratory depression and even death in patients who were not first titrated to a stable daily dose of conventional MS elixir.[15] Once this is accomplished, patients can then be switched to controlled-release MS, keeping the total 24-hour dose constant, but dividing it into 2 or 3 fractions instead of the 5 or the 6 required with conventional therapy. The cost of therapy with sustained-release preparation is no greater than equivalent conventional morphine elixir therapy.

Analgesic Adjuncts

Forrest *et al.* conducted a double-kind, single-dose trial of 3 different doses of MS alone versus MS combined with 2 different doses of

dextroamphetamine given IM for postoperative pain in 450 patients.[10] They found a dose-dependent increase in both MS's analgesic effects and sedative side effects. The addition of dextroamphetamine (5 or 10 mg) resulted in increased analgesia and decreased sedation at all MS doses, suggesting the utility of this combination for patients whose dose of MS is inadequate for pain control, but limited by sedative side effects.

Ferrer-Brechner and Ganz studied 30 patients with widely metastatic cancer and moderate to severe pain.[16] In a double-blind, crossover fashion, they were randomly assigned to receive 1 of 4 drug combinations consisting of methadone 2.5 mg or 5 mg with or without ibuprofen 600 mg on each of the 4 days of the 4-day study. They found that ibuprofen provided increased pain relief at both methadone dosages without additional side effects.

Conclusions

For moderate or severe pain syndromes in cancer patients, MS is the drug of choice. In order to achieve continuous suppression of pain, it should be administered in an around-the-clock fashion, rather than on an as-needed basis. The dose should be individualized and carefully titrated with oral MS elixir. Once the patient has been stabilized on this preparation, controlled-release MS can be substituted in the same total daily amount divided into 2 or 3 doses. Stool softeners and laxatives causing peristalsis should be given to all patients. Antiemetics should be used as needed. If tolerance to a narcotic develops, the dose should be increased or a different narcotic agent substituted at less than equianalgesic dose. The addition of ibuprofen may augment the analgesic effects of narcotics. Dextroamphetamine may augment analgesia and decrease sedation. — ROBERT RAISH, M.D., *Fellow in Internal Medicine and* GERALD CLAMON, M.D., *Associate Professor of Internal Medicine.*

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Information of Interest

STATE DEPT. OF PUBLIC HEALTH

PHYSICIAN SERVICE ON LOCAL BOARDS OF HEALTH

OVER 100 Iowa physicians perform vital public service as members of local boards of health. Chapter 137 Code of Iowa requires each County Board of Supervisors to appoint a 5 member board of health, at least one of whom is a licensed physician. These unpaid boards have broad responsibility for public health. They assess the needs in the county and determine what specific programs should be offered by the board. They also have the latitude to contract with other agencies or organizations for services or joint activities.

The powers of the boards of health are defined in Chapter 137 and are summarized by 2 sentences from the Code. Local boards may *Provide such personal and environmental health services as may be deemed necessary for the protection and improvement of the public health. . . . Make and enforce such reasonable rules and regulations not inconsistent with law or with rules of the state board as may be necessary for the protection and improvement of the public health.*

There are some specific duties in other chapters of the Code.

139.9 Subsection 6. The local board of health shall furnish the state department of health 60 days after the first official day of school evidence that each person enrolled in any elementary or secondary school has been immunized as required in this section subject to subsection 4. Subsection 7. The local boards of health shall provide the required immunizations to children in areas where no local provision exists to provide these services.

TABLE I

INCOME/EXPENDITURES/BOARDS OF HEALTH

Sources of Funds	
Local Tax	$ 7,429,500.62
Federal Revenue Sharing	526,090.03
Medicare/Medicaid	5,083,165.24
Other Home Health Care Fees	720,000.50
Enviramental Permits and Fees	870,187.19
State Grants	5,569,707.14
Federal Grants	279,913.24
Other	375,402.16
Expenditures	
Nursing Salaries	$ 5,652,233.12
Enviranmental Salaries	1,824,354.52
Clerical Salaries	1,936,940.65
Other Salaries	2,888,875.69
Fringe Benefits	2,206,515.02
Travel	893,706.91
Other Expenses	1,793,654.71
Purchase Fram Other Agencies	3,657,685.50

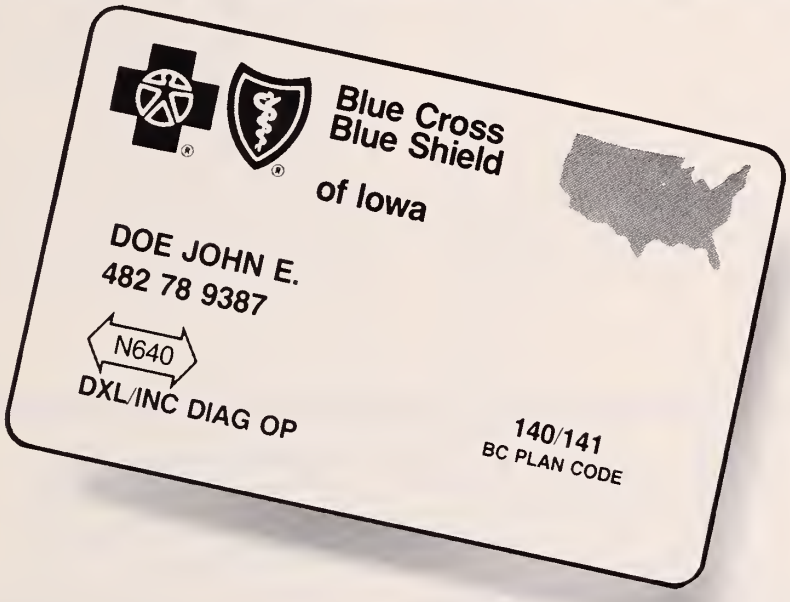
455B127 Subsection 2. . . . Each local board of health is the agency to regulate private water supplies and private sewage disposal systems, but the department (Water, Air and Waste Management) shall maintain jurisdiction over discharges to the waters of the state. Each local board of health shall adopt standards relating to the design and construction of private water supplies and private sewage disposal facilities, which standards shall not be lower than the minimum standards adopted by the commission (Water, Air and Waste Management).

Within this framework the boards offer many services. Most counties provide the services directly but in some the boards of health sub-contract with other agencies for provision of services. The total expenditures of all Iowa local boards of health for FY 84 was $20,853,966.12. A little over one-third of this came from local tax funds. The other major

(Please turn to page 514)

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portions are from Medicare and Medicaid fee income for home health care and from state grant funds (primarily public health nursing and homemaker home health aide service grants). Table I presents a summary of the income and expenditures for FY 84.

TABLE II

Per Capito Expenditure In Dollors	*No. of Counties*
Less thon 3.00	4
3.00-5.99	27
6.00-8.99	32
9.00-11.99	15
12.00-14.99	14
15.00-17.99	3
18.00 ond over	4

The automony and the diversity in the organizational approach followed by different counties are reflected in Tables II and III.

TABLE III

Per Capito Expenditure Locol Funds	*No. of Counties*
Less thon 1.00	22
1.00-1.99	27
2.00-2.99	24
3.00-3.99	12
4.00-4.99	5
5.00 ond over	9

Table II presents information about the per capita expenditures of local boards. For those counties where there is a city board of health and a county board of health a combined figure is used for the county. The statewide average was $7.16 per capita.

Table III presents similar information on per capita expenditures of local tax funds and federal general revenue sharing funds. The statewide average was $2.55.

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Black Hawk	Karl E. Jauch, MD
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Bremer	Mike Berstler, MD
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	Phillip L. Bryant, DO
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Clarke	Thomas Lower, DO
Clay	Steven Wolfe, MD
Clayton	David C. Cranston, MD
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Delaware	John Tyrrell, MD
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	Charles Heller, MD
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September 1985 Morbidity Report

Disease	Sept. 1985 Total	1985 to Date	1984 to Date	Mast Sept. Cases Reparted From These Counties
Amebiasis	5	47	57	Jahnsan, Page, Pattawattamie, Winneshiek
Brucellasis	1	5	2	Crawford
Chickenpax	37	5385	6413	Scattered
Campylabacter	27	245	244	Scattered
Cytamegalavirus	2	9	10	Blackhawk, Jahnsan
Eatan's Agent infectian	0	6	31	
Encephalitis, viral	12	24	24	Scattered
Erythema infectiasum	0	0	51	
Gastraenteritis (GIV)	657	10780	9504	Scattered
Giardiasis	74	381	271	Scattered
Hepatitis, A	4	37	40	Palk, Scott
Hepatitis, B	3	67	77	Linn, Palk, Scatt
Hepatitis, Nan A-B	2	14	14	Block Hawk, Palk
Hepatitis type unspecified	1	7	9	Dubuque
Herpes Simplex	117	852	678	Scattered
Herpes Zaster	0	0	2	
Histaplasmasis	3	18	16	Black Hawk, Palk, Pattawattamie
Infectiaus mananucleasis	19	124	106	Scattered
Influenza, lab confirmed	0	169	176	
Influenza-like illness (URI)	1464	26556	31810	Scattered
Legianellasis	2	7	3	Buena Vista, Dubuque
Malaria	1	2	2	Butler
Meningitis aseptic	9	38	49	Scattered
bacterial	4	97	91	Cherakee, Linn, Pattawattamie, Scatt
meningacaccal	1	8	21	Baane
Mumps	3	13	22	Dubuque, Jasper, Scatt
Pertussis	2	7	10	Hardin, Scatt
Rabies in animals	12	128	123	Scattered
Reye Syndrame	0	4	2	
Rheumatic Fever	1	3	0	Shelby
Rubella (German measles)	0	1	1	
Measles	0	0	0	
Salmanellasis	8	218	177	Scattered
Shigellasis	2	16	32	Linn, Tama
Taxic Shack Syndrame	1	6	12	Warren
Tuberculasis tatal ill	3	46	50	Bentan, Lauisa, Webster
bact. pas.	3	43	44	Bentan, Lauisa, Webster
Typhaid Fever	0	2	0	
Venereal diseases: Ganarrhea	398	3300	3225	Scattered
Syphilis	0	17	11	

Other Nan-Repartable Diseases: Ascaris — 1, Calhaun; 1, Palk; Chlamydia — 1, Jahnsan; 2, Scatt; Ureaplasma Urealyticum — 4, Jahnsan; Yersinia — 1, Buchanan; 2, Jahnsan; 1, Palk.



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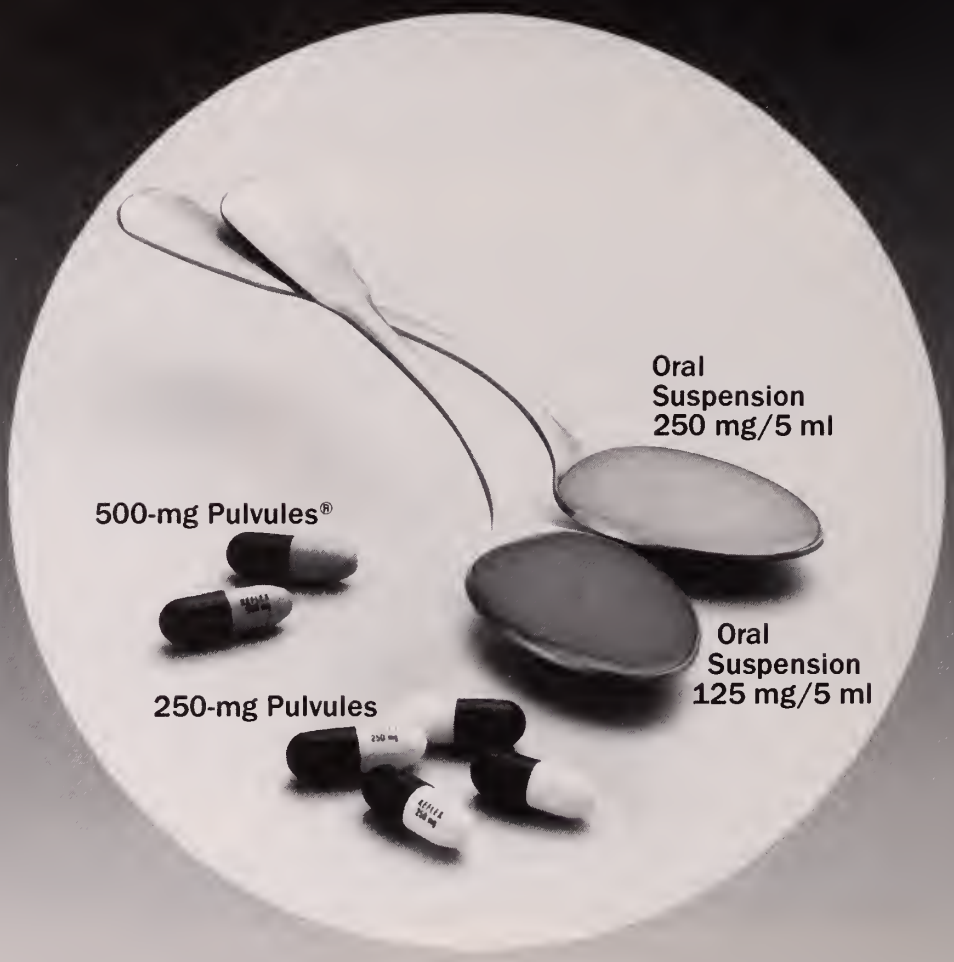
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News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. James K. Fortson has joined the medical staff at the Community Medical Center in Keokuk. Dr. Fortson received the M.D. degree at State University of New York in Buffalo; interned at Highland General Alameda County Hospital in Oakland, California, and had an otolaryngology residency at Boston University. Dr. Fortson has been chief otolaryngologist associate at the Kern Medical Center in Bakersfield, California. . . . **Dr. A. C. "Clinton" MacKinney** has joined the Cresco Medical Center. Dr. MacKinney received the M.D. degree at the Medical College of Ohio in Toledo and completed his family practice residency at St. Francis Hospital in LaCrosse, Wisconsin. . . . **Dr. Byron H. Carlson** has joined the Park Clinic and will practice in its Forest City office. Dr. Carlson received the M.D. degree at the University of Minnesota; he had his family practice residency at Sioux Valley Hospital in Sioux Falls, South Dakota. . . . **Dr. James O. Brown** has joined the Carlisle Medical Center. Dr. Brown is a graduate of the University of Kansas School of Medicine; he had his family practice residency at Carswell Air Force Base in Fort Worth, Texas. . . . **Dr. Duane D. Jasper** has joined Medical Associates in Independence. Dr. Jasper received the M.D. degree at the U. of I. College of Medicine and completed

(Please turn to page 520)

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his family practice residency at St. Joseph Mercy Hospital in Mason City.

Dr. Joan Nilles has joined **Dr. Dennis Murphy** in family practice in Sheldon. Dr. Nilles received the M.D. degree at the U. of I. College of Medicine and served her family practice residency in Waterloo. . . . **Dr. Michael W. Crane** has joined the Park Clinic in Mason City. Dr. Crane received the M.D. degree at the University of Illinois; he did his orthopedic residency at Blodgett Memorial Medical Center in Grand Rapids, Michigan. In 1984-1985 Dr. Crane was an instructor in the Department of Orthopedics at Michigan State University.

Dr. Roy A. Patterson, longtime Webster City physician, recently was honored for his 50 years of membership in the Webster City Masonic Lodge. . . . **Dr. Henry J. Caes,** Sioux City, has retired following 26 years of service in the Siouxland area. Dr. Caes received the M.D. degree at New York Medical College in New

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York City; interned at the U.S. Military Hospital in Brooklyn, New York and served his pathology residency at the National Naval Medical Center in Bethesda, Maryland. He came to St. Joseph Mercy Hospital in Sioux City in 1958 and was chief pathologist and laboratory director until 1982 when he became consulting pathologist at Marian Health Center. . . . **Dr. Stuart W. Leafstedt** has been named president of the medical staff at St. Luke's Regional Medical Center in Sioux City. Other officers elected are — **Dr. Dale R. Wassmuth,** president-elect and **Dr. Craig W. Bainbridge,** secretary treasurer. All are Sioux City physicians.

Dr. Abdul Q. Sadat to the Medical Clinic, P.C., in Hamburg. Dr. Sadat received his medical education in Kabul, Afghanistan. He came to the United States in 1978; took postgraduate work at St. Barnabas Hospital in Jew Jersey and had a residency in psychiatry at Western Missouri Mental Health Center in Kansas City.

DEATHS

Dr. Robert E. Anderson, 75, longtime Chariton physician, died August 25 at Younkers Rehabilitation Center in Des Moines. Dr. Anderson received the M.D. degree at the U. of I. College of Medicine; served his internship and residency at Broadlawns Hospital in Des Moines. He began the practice of medicine in Chariton in 1937.

Dr. Willard S. Pheteplace, 72, former director of the Mississippi Valley Regional Blood Center, Davenport, died September 3 in Waterbury, Connecticut. Dr. Pheteplace received the M.D. degree at the University of Rochester School of Medicine in Rochester, New York, and took postgraduate work at Henry Ford Hospital in Detroit, Michigan, and University of Iowa Hospitals in Iowa City. A founder and medical director of the Quad-City Hospital School of Medical Technology, he retired in 1981 as a pathologist at Mercy Hospital in Davenport where he had been employed 34 years. Dr. Pheteplace was a member of the American Society of Clinical Pathologists; College of American Pathologists; a diplomate of the American Board of Pathology; member of the Scott County Medical Society and a founding partner of the Quad-Cities Pathologists Group.

Dr. Emerson J. Steenrod, 78, Iowa Falls, died September 8 at his home. Dr. Steenrod received the M.D. degree at the University of Pittsburgh and served his surgery residency at the Mayo Clinic in Rochester, Minnesota. He began his medical practice in Iowa Falls in 1939, retiring in 1976. Dr. Steenrod was a past president of the Hardin County Medical Society; member of the Pan Pacific Surgical Association; American College of Surgeons and International College of Surgeons.

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A Monthly Commentary

IN THE PUBLIC INTEREST

Physician Supply — Holding the Line

WILL THE demand for physicians in Iowa greatly outdistance the supply in the coming years? It's unlikely say those whose business is tracking trends in doctor demographics.

Medical school graduates are not expected to stay in Iowa in any larger numbers. Nor is it likely that fewer physicians will leave the state or retire early. What is having an impact is the changing attitude of citizens in the very sparsely populated communities.

"Most of the very small Iowa towns have dropped off our list of communities actively recruiting physicians," says Roger Tracy, director of U of I Office of Community-Based Programs."Some have obtained satellite coverage from nearby larger cities; others have recognized the change in delivery approaches and have given up hope."

Periodically, the U of I Office of Community-Based Programs surveys Iowa family practice clinics, hospitals and community organizations to assess the need for family physicians. As of July, 1985, 149 communities were seeking 205 doctors. However, the communities currently recruiting physicians include very few hoping to get a *town doctor.*

"The communities are, for the most part, ones that have hospitals and have more than one doctor already. Most have populations of over 2,000; they can expect to recruit eventually," Tracy explains. "But doctors just aren't entering solo practice in towns of under 500 like they once did."

Most of the 149 communities on the list are, according to Tracy, "reasonable practice opportunities." They'll get the physicians they need; but the latest data indicate some will play a waiting game first — particularly those shopping for family physicians.

The Office of Community-Based Programs tracks all Iowa physicians with its computer. According to that computer, Iowa saw a net gain of 9 family physicians in 1984. Over the past 8 years, Iowa has gained an average of 7 family doctors per year.

According to an annual report issued by Tracy's office, Iowa opened 1984 with 3,505 physicians (including MD's and DO's of all specialties, excluding residents). By the end of December, 243 physicians had entered practice from training programs or through relocation, and 188 physicians had retired, died or left the state — a net gain of 55 physicians.

"In the past 7 or 8 years, we've typically seen increases of 70-75 doctors of all specialties per year. During 1984, we lost about 20 more physicians than we usually do," Tracy comments.

Because more physicians are retiring earlier, the mean age of Iowa doctors is dropping. It will continue to do so, says Tracy. In addition, an increasing percentage of Iowa physician loss is due to relocation to practices outside the state.

"The forecast of a physician increase for the late 80's and 90's was a regional phenomenon. We've studied Iowa's 8-year trend thoroughly and we expect our net physician gains will continue to be about half the national average," Tracy says. "This is typical for a midwestern state."

Is there any sure way to attract more physicians and hang onto the ones we already have?

"Move the sun closer to Iowa," Tracy concludes.

November 1985

Iowa Medicine

EXCERPTS FROM A SYMPOSIUM
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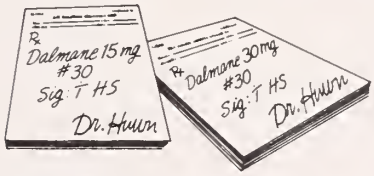
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Precautions: In elderly and debilitated patients, it is recommended that the dosage be limited to 15 mg to reduce risk of oversedation, dizziness, confusion and/or ataxia. Consider potential additive effects with other hypnotics or CNS depressants. Employ usual precautions in severely depressed patients, or in those with latent depression or suicidal tendencies, or in those with impaired renal or hepatic function.

Adverse Reactions: Dizziness, drowsiness, lightheadedness, staggering, ataxia and falling have occurred, particularly in elderly or debilitated patients. Severe sedation, lethargy, disorientation and coma, probably indicative of drug intolerance or overdosage, have been reported. Also reported: headache, heartburn, upset stomach, nausea, vomiting, diarrhea, constipation, GI pain, nervousness, talkativeness, apprehension, irritability, weakness, palpitations, chest pains, body and joint pains and GU complaints. There have also been rare occurrences of leukopenia, granulocytopenia, sweating, flushes, difficulty in focusing, blurred vision, burning eyes, faintness, hypotension, shortness of breath, pruritus, skin rash, dry mouth, bitter taste, excessive salivation, anorexia, euphoria, depression, slurred speech, confusion, restlessness, hallucinations, and elevated SGOT, SGPT, total and direct bilirubins, and alkaline phosphatase, and paradoxical reactions, *e.g.*, excitement, stimulation and hyperactivity.

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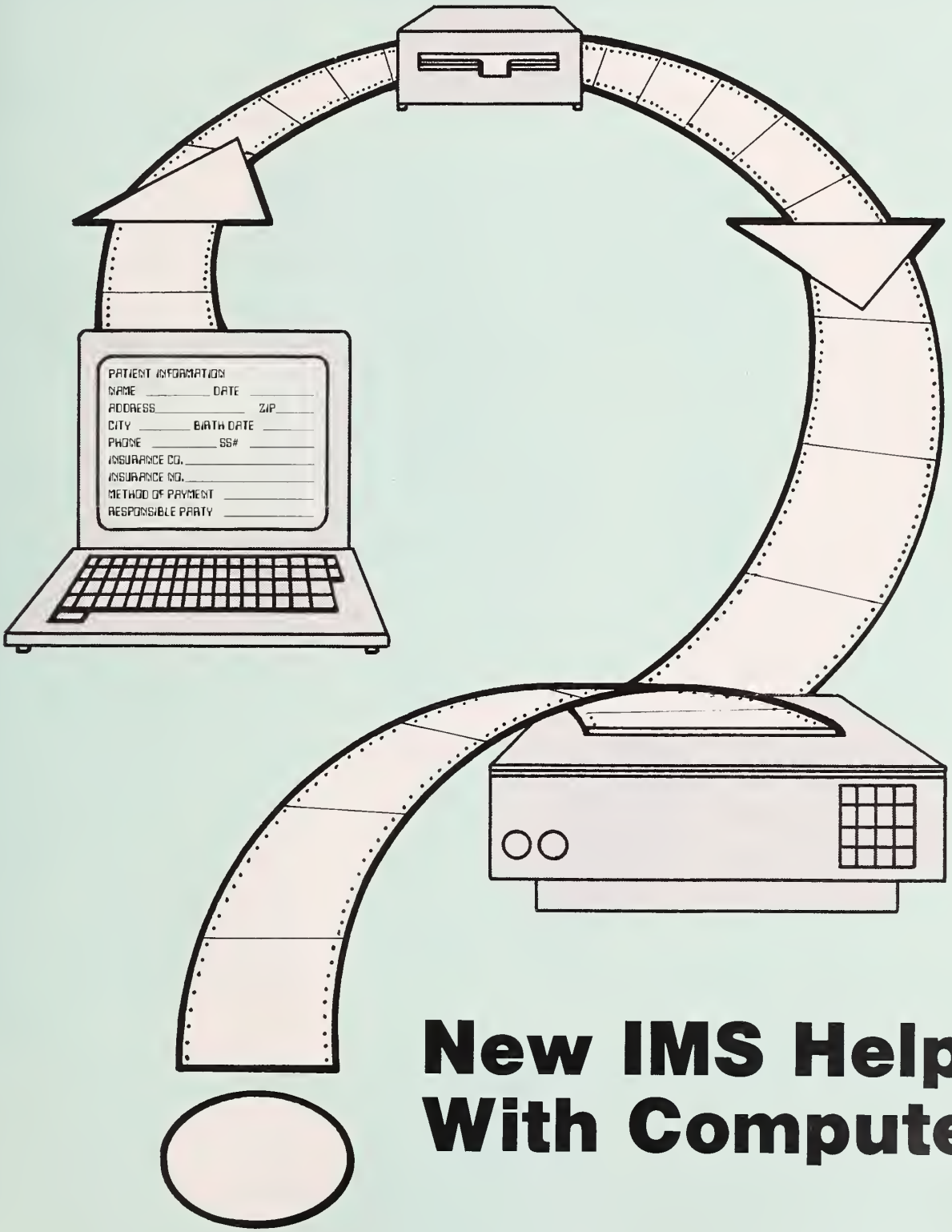
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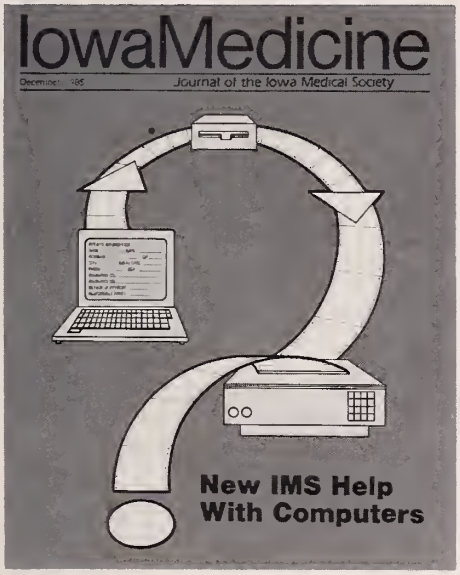
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ABOUT THE COVER



ABOUT THE COVER — The computer continues to loom as an instrument of great potential in the office/clinic of the Iowa physician. Some physicians have incorporated this technology with much success; others have had less than satisfactory results. Many physicians are still exploring the possibilities, weighing the investment against the benefit. The IMS is expanding its efforts to assist member physicians in the contemplation of this matter. A new program is mentioned on page 537.

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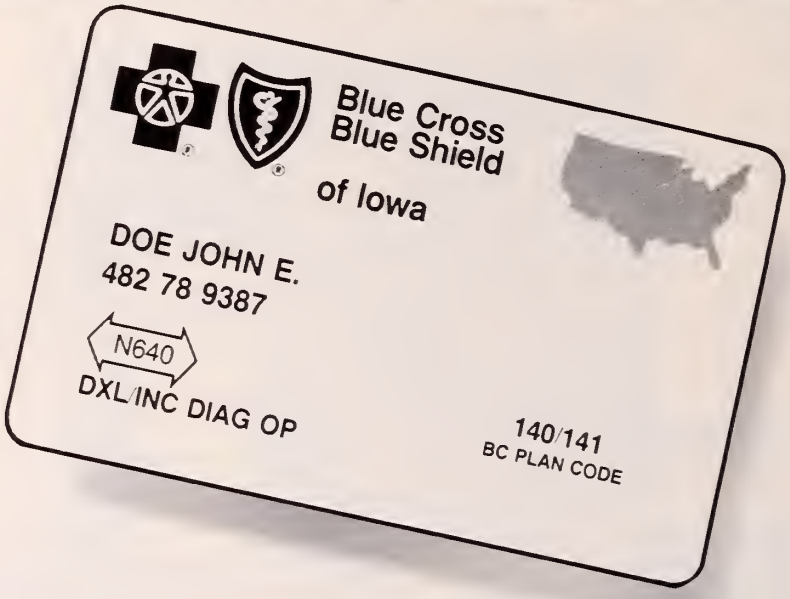
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PRESIDENT'S PRIVILEGE



When you read these words, the pace of the Christmas holidays will be quickening. Whatever faith or spiritual belief we embrace, this season of the year provides a special opportunity to think of others — to share in the quest for peace on earth, good will to men.

As physicians, we are uniquely positioned to influence the way life proceeds. We are looked to by our fellow men for hope, for direction, for strength. We listen. We test. We analyze. We treat. We care, restore, maintain — and provide comfort when little else is available.

When we are guilty of indifference, when we give too little of our time to our patients, when we turn excessively to personal gratification, we fail not only those we serve; but we fail ourselves and our profession. The idea of rededication is always appropriate.

These are difficult times for many of our fellow Iowans. We see uncertainty and discouragement in the eyes of many patients. The spirit of love and caring will be tested with economic conditions as they are. Where the opportunity presents itself this Christmas season and in the year ahead to reach out to help another, do so. Do so willingly and to the full extent of your capacity.

Please join me in reaffirming our personal and professional commitment to caring for others — the theme of Christmas. Best wishes to you and your family.

Emmett B. Mathiasen M.D.

Emmett B. Mathiasen, M.D.
President

Computers And Your Practice: Hardware And Operating Systems

DUANE C. ABBEY, Ph.D. and
MARY W. ABBEY
West Des Moines, Iowa

What do you know about CPUs, peripherals and disk drives? Is the Iowa physician going to need a computer to maintain a modern office practice? Here is the third article providing basic information on computer consideration and acquisition.

THIS IS THE THIRD in a recent series of articles for physician members of the Iowa Medical Society on the general subject of *Computers and Your Practice*. This discussion will cover the basic aspects of hardware and operating systems.

There are 3 major components to a computer system:

1. **Hardware**
2. **Software**
3. **Peopleware**

The physical devices are the *hardware* associated with the computer system. The *software* is intangible and comprises the programs and systems which are sets of instructions to be executed by the computer system. Individuals involved with computers are the *peopleware;* they are either those that program the systems or those that actually operate and use them.

Software can be further categorized into:

a. **Operating System Software**
b. **Application System Software**

The operating system software typically comes with the hardware; that is, there is no real choice. Once you select the hardware, the operating system is simply part of the purchase. The applications are the programs and systems that you will actually run when you use the computer.

This article will introduce you to the basic components of a computer system and will discuss the related operating systems. Our scope will be limited to microcomputer and minicomputer systems.

Note well, that in the selection and use of a system the applications software is by far most important. It will be the prime determinant of any system you select. However, the easiest part of a computer system to touch and look at is the hardware. It is this component that is often evaluated at greatest length.

Hardware and the Future

Advances in computer hardware occur almost daily. The ability to do more at the same or lower cost can cause you to hesitate in acquiring a computer system. After all, if you only wait another 6 months or so, you will be able to get more at a potentially lower cost. Of course, the same will be true another 6 months after that! The point in evaluating hardware (and the associated operating system) is to find

Dr. Abbey is a partner in Coordinated Financial Services, West Des Moines, where he provides financial and computer consultation. His wife, Mary, is a computer scientist and systems management specialist; together they form Abbey & Abbey, Consultants.

the equipment to meet your needs at a cost that is within your cost-benefit justification range.

In addition it is appropriate to secure equipment that will remain reasonably current for the time period in which you anticipate using it. And it would be especially beneficial to upgrade it without making major changes in your software and operations as newer and better equipment becomes available. Such is the challenge of evaluating computer hardware.

The Main Components

Computer hardware naturally divides into 2 categories:

- **Central Processing Unit (CPU)**
- **Peripheral Devices**

The CPU is a combination of the heart and brain of the computer. It is where all of the work gets done. The CPU then communicates with other "external" or peripheral devices.

Peripheral devices also have a natural division between:

- **Input/Output Devices**
- **Storage Devices**

The I/O devices are printers, keyboards, video displays, plotters, etc. Storage devices are generally magnetic media devices such as tape drives, floppy disk drives, and hard disk drives.

The operating system is a special piece of software that provides a buffer between the *raw* hardware and the user and/or user application programs. The operating system manages the various hardware components and provides communication to the user and various applications.

Figure 1 shows a logical schematic of a computer system. The computer consists of the CPU and associated Main Memory. This is the place where the operating system and applications program reside. The other logical components are Input device, Output devices and Storage devices. Figure 2 shows a typical configuration. Note that the physical appearance may be quite different from the logical schematic. Some systems actually combine all the components into a single box.

The CPU — Central Processing Unit

The central processing unit is a critical element in a microcomputer system. These are

the so-called *microprocessor chips*. They come in a number of different types. The particular type may or may not be of significance in selecting and using a computer system. The primary impact of different microprocessors relates to the:

1. Speed and capacity of the computer system.
2. The operating system and thus applications availability.

These chips come basically in 8-bit, 16-bit and 32-bit types. An array of strange numbers describes them. The most common 8-bit chips are the 6205 (Apple) and Z80 or 8080. With 16-bit chips it's the 8088 and 6800, while the 32-bit chips are represented by the 68000 and WE32000. To add to the confusion there are a number of *coprocessor* chips that can enhance the main CPU or, for that matter, there may be several microprocessor chips that are dedicated to special functions.

(Please turn to page 536)

Mini Computer Glossary

CPU — Central Processing Unit: This is both the heart and the brains of the computer. In microcomputers it consists of a single microprocessor chip.

RAM — Random Access Memory: This is the main memory of the computer system and is directly accessible by the CPU.

ROM — Read Only Memory: This is a special type of memory accessible by the CPU, but it can only read predetermined information placed in ROM.

Byte(s): A basic unit of storage in the computer generally comprising a single character (letter or digit).

I/O — Input/Output: Devices that provide input to or output from the computer itself.

Floppy Disk(s): A magnetic storage medium that comes in three different sizes — 8", 5", and 3".

Winchester Disk: A hard disk magnetic storage medium that comes in sizes ranging from 5 megabytes to over 100 megabytes.

Peripherals: Those devices that are outside of the computer itself which consist of input, output and storage components.

COMPUTERS AND YOUR PRACTICE PART III

I/O Devices — Printers

Technological advances in printers have not been as spectacular as with hard disk drives, but the progress has been steady. Improvement in quality of dot-matrix printers has brought them to the point where they rival the slower (but higher quality) daisy-wheel, word processing printers. Coming swiftly into the picture are the ink-jet and laser printers. Price performance in this technology will make them widely available in most office settings. Performing an in-depth, cost-benefit analysis of different types of printers can in itself be quite a project!

Typically, if you want high quality you will have to pay more for a printer. If you can sacrifice quality for speed, the dot matrix printers will fill the bill at a reasonable cost. On the other hand, if speed is not critical, but you want high quality, then the daisy-wheel printer is what you need.

I/O Devices — Keyboards, Video Displays and Plotters

There is often no real choice in keyboards — they simply come with a given system. However, it is good to know that some keyboards can be frustrating to use. If you have any choice in the matter, be sure you get input into the choice from those who are going to use the keyboard.

Similarly, video displays may seem to be a very easy subject. Probably the biggest concern is that of color versus non-color. However, there are a number of considerations to be made. For instance, green phosphor screens are very common for word processing and general office applications. But many prefer amber screen displays claiming that they are easier on the eyes. The main point is to look before you leap — make sure you understand what alternatives exist before a display is simply thrown into any system that you might consider.

Plotters are among the most intriguing output devices. Almost anyone seeing these relatively inexpensive devices plotting away will almost be hypnotized. A variety of devices is available today at relatively low cost. The biggest concerns in this area are the need for such output and also the availability of software to interface with the plotter. There is little use in being able to draw pretty pictures with a plotter if you cannot easily tell it what to draw.

I/O Devices — Communications

In the office setting there is a great need for communications between computers. This need can be *local* in nature or there may be a need to communicate with a *remote* computer that is geographically distant. Local communications capability is generally built into the office computer itself. Remote communications require the use of a modem (modulator/demodulator), appropriate software, and telephone lines.

A main concern is to select a system with a common type of CPU with enough power to meet your anticipated needs. After all, they all do the same thing: add, subtract, multiply, divide and make logical comparisons.

Main Memory

Main Memory is the memory directly accessible by the CPU. You may see this described as RAM (Random Access Memory). This type of memory is so closely associated with the CPU that the two are often logically lumped together. In general, the more main memory, the more powerful the computer system. Typical main memory capacities run from 128K bytes to a *full megabyte*. The K refers to *thousands* and the *bytes* are the number of characters that can be stored. The *megabyte* is a million bytes of capacity. Another type of memory you may encounter is ROM (Read Only Memory). This is special memory to be read only by the CPU — it should not be confused with RAM in assessing the relative power of a system.

You can ascertain the power of a system by knowing the type of microprocessor chip and the main memory capacity. For instance, an 8-bit system with 128K will not be as powerful as a 16-bit system with 512K. Note that both systems may perform the same functions, but the larger system will do it much faster in all likelihood.

New IMS Computer Program

Support for Iowa physicians wanting help in evaluating and acquiring computerization for their offices/clinics is soon to be available from the Iowa Medical Society. This new computer support program was authorized in November by the IMS Executive Council on recommendation of the Committee on Member Services, which is chaired by Wayne Rouse, M.D., Boone.

Three entities are joining together to provide this program: (1) the Iowa Medical Society and its wholly-owned affiliate, IMS SERVICES; (2) Coordinated Financial Services (CFS), and (3) Medical Computer Management, Inc. (MCMI).

MCMI was selected as a joint venture partner in the new program following evaluation of nearly 475 medical computer vendors. This evaluation was made by Duane Abbey, Ph.D., of CFS, on behalf of the IMS Committee on Member Services.

Physicians interested in obtaining information about the new program are invited to contact IMS headquarters.

Operating Systems

Closely associated with the microprocessor chip is the operating system. Many of the earlier systems had their own specially developed operating systems. For example, the Apple II computer used the 6502 microprocessor with Apple DOS (Disk Operating System). The Z80 and 8080 chips generally use the CP/M (Control Program/Micro) which has become a standard operating system. For the 16-bit machines the most common operating system is MS/DOS (Microsoft Disk Operating System). For 32-bit systems, UNIX appears to be heading the pack as a standard.

In some cases you may choose an operating system for your computer. If this happens, be sure to choose one that is standard and popular. Such a choice will give you reasonable assurance that a wide variety of software is available. If you are considering a system that has a *unique* operating system, you might want to think twice about the possible ramifications.

Storage Devices — Floppy Disks

Currently the most pervasive form of mass storage is the floppy disk. They now come in 3 sizes: 8, 5, and 3 inches. They are called *floppy* because the magnetic media can literally be bent although the 3 inch disks are far from bendable! Historically, the progression has been from large to small; in addition there has been a movement in increasing density of storage — terms such as double and quad density are common. Of course you can use one side of the disk (single-sided) or both sides (double-sided). The amount of information stored on a single diskette depends upon a number of variables, but they go from about 150K on up to well over 600K.

In addition to floppy disks there are cassettes. Cassettes can store a great deal of information, but they have the inherent problem of being linear, i.e., you must sequentially search the tape to find what you want. Floppy disks are more direct in finding a particular record or document. However, there are some applications where cassette tape drives have some advantages. One of them is in backing up hard disk drives or the so called winchester disk drives.

Storage Devices — Winchester Disks

One amazing advance in technology over the last 2 years has been in the price-performance ratio of the hard disk drive or what is commonly called the winchester disk drive. Storage capacities of 10, 15, 20, and 40 megabytes are common. The pricing structure seems to fall almost every month and reliability has become very high. Sheer speed and quickness of access portend the replacement of floppy disks for information that is either frequently or commonly accessed. Virtually any computer that is seriously considered for an office environment will use a hard disk drive and 100 megabyte storage; its availability at very affordable prices is not far away.

Some systems have drives that allow removal of the disk, but these systems are generally found in large data processing installations. Most office computers will use a self-contained disk drive with no removal of the disk.

How To Computerize Your Practice

SAHEB SAHU, M.D.
Des Moines, Iowa

An Iowa physician who has computerized his office shares firsthand knowledge of the experience. The emphasis now is on business applications, but says the author the future use will be directed more toward clinical and practice management.

WE COMPUTERIZED our office recently with an Altos-986 multi-user computer and MDX-medical software. Our computer will support 9 stations; we have 4 hooked up now. It has 40 megabytes hard disk, a storage tape back-up system and high speed dot-matrix printer. The cost was about $21,000.

Prior to computerization I read and researched extensively the area of office automation. As a hobby, I follow the industry closely. This article summarizes the process followed in computerizing our practice.

Elements of a Computer System

Central Processing Unit (CPU)

The CPU is the computer itself. It performs mathematical functions and controls the operations of the other 4 components. On microcomputers, the entire CPU is contained on one integrated circuitory chip.

Dr. Sahu is a practicing pediatrician and neonatologist in Des Moines.

Main Memory

Main memory holds the program or programs that are being run and the records that are being processed. Main memory permits faster access to the data than does disk memory; however, main memory is also more expensive than disk memory. Consequently, on most systems, only the programs and data that are being run are stored in the main memory, while programs and data which are not in use are stored in disk until needed.

Computers are available with varying memory capacities. Keep in mind that a system must have sufficient memory to handle all the data being processed at a given time.

Work Station

The work station consists of a display tube and a keyboard. It is often referred to as a terminal, CRT, Cathode Ray Tube, display terminal screen or operator station. Its purpose is to enter information into the computer system, retrieve information, and control the computer's operation. Work stations differ in (1) the size and readability of the screen, (2) the ease of using the keyboard, and (3) the speed with which data are communicated to and from the CPU. The design of display units and keyboards is important to user comfort and productivity because the work station is the main point of interaction between the computer system and the operators.

Disk Drive

The disk drive is a component that holds one or more magnetic disks on which a large volume of information may be stored. Once

"written to the disks" the information can be retrieved, changed, added to, or deleted during day to day operations.

The disk drive rotates each disk at a high speed and reads data from or writes data to the disk with one or more read/write heads. However, there are various types of disk drive and each type is designed for a certain type of disk. Basically, there are 4 types of disks: (1) floppy disks, diskette, (2) cartridge disk, (3) diskpack, and (4) Winchester (fixed) disk or hard disk.

Printer

The printer produces printed output (hard-copy). Printers vary in 2 important respects: speed and print quality. Speeds range from only a few characters per second to hundreds of lines per minute. Print quality varies from the common dot-pattern characteristics produced by dot matrix printers to solid typewritten quality characters produced by letter quality printers.

Operating System Software

The operating system software is a set of programs that performs many of the functions once handled by trained data processing personnel. Each program has hundreds or thousands of instructions to be carried out by the CPU, including house keeping chores, such as copying disk and purging files. The operating system orchestrates the separate pieces of equipment into a functioning whole. Operating systems are usually supplied with the hardware.

Application Software

The application software is one or more programs that take the computer step by step through the functions and operations of day-to-day routine business.

Small System Application

Common uses of a small business computer system include:

A. Utility Applications
1. *Word Processing*
2. *Data Base*
3. *Electronic Mail*
4. *Telecommunications*

B. Accounting Applications
1. *General Ledger/ Financial Statements*
2. *Accounts Payable/Receivable*
3. *Inventory*

C. Professional — Specific Applications
1. *Medical Billing*
2. *Practice Analysis*
3. *Medical Records*
4. *Medical Diagnosis and Treatment*
5. *Medical Research*

How To Select A Vendor

A local full service vendor is preferred over a big national firm with no local outlet. The vendor should have a store with a learning center and a service department. He should be an authorized dealer for major systems. A dealer should also have experience with medical office systems.

Cost

Most physicians do not need computer systems costing $80,000 or up, however bargain basement systems (under $10,000) will not provide sufficient performance. The hardware (one micro-computer, one terminal, one good quality printer) will cost from $10,000 to $15,000, and the basic business software will cost from $5,000 to $7,000. Adding clinical and practice management software will cost an additional $5,000 to $10,000. It is better to start with basic business software and add as you learn the system and identify other office needs.

Selecting Proper Hardware — Multi-Users Vs Single Users

Most physicians will need a multi-user, multi-tasking computer. The advantage of the multi-user, multi-tasking computer is that several persons can do different jobs at different stations without being locked out. For example: the insurance clerk can enter billing information at one terminal, the receptionist can make an appointment at another terminal, and the doctor or the nurse can look up the patient's medical records at still another terminal, all simultaneously. The single user computer does not have this capability.

The multi-user systems have been very ex-

(Please turn to page 540)

HOW TO COMPUTERIZE YOUR PRACTICE

(Continued from page 539)

pensive. Recently, the prices have dropped to under $10,000. Some of the reliable multi-user micro-computers under $10,000 are Altos, IBM-PC-AT, and DEC.

Disk Capacity

A hard disk is a must for a physician's office. Depending upon the number of doctors in the practice, the information storage requirement will vary. As a rule of thumb, buy 10 to 15 megabyte hard disk per doctor, or buy twice as much as you think you need now. If a 10 megabyte hard disk costs $1,500, a 20 megabyte usually will cost $2,000 rather than $3,000.

Back-Up Device

A back-up device is a must in the computer system. A magnetic tape or a hard disk system is somewhat expensive ($1,500 to $3,000) but very efficient and quick. For a busy office a back-up device on a floppy disk is very time consuming and should not be purchased.

Printers

There are excellent printers for $1,000 to $2,000. The type of printer you will need will depend on your practice need. For business use, like printing insurance forms, statements, accounts receivable, etc., a less expensive but fast dot matrix printer will do the job. Most new dot matrix printers can also be slowed for better quality with the switch of a button, but they do not look like a typed letter. If your practice sends out a lot of letters, you should buy a second letter quality printer.

Operating System Software

The small business market is dominated by the MS-DOS (Microsoft Disk Operating System). IBM-PC, IBM-XT, and IBM compatible like Compaq, AT&T 6300, all use the MS-DOS operating system. These are all single user machines. The multi-user computers like Altos, a new AT&T 3B2 use Unix, or Zenix operating systems developed by Bell Laboratories many years ago. Many computer experts believe that Unix and Zenix will be the operating systems of the future. Hence, if you are buying a single user computer, buy one which runs on MS-DOS; if you are buying a multi-user computer, buy one which runs on Unix or Zenix operating systems.

Medical Software

There are many medical software packages available. Many are good. It is difficult for an individual physician to judge which one is best suited for him or her. Some criteria to look for are:

1) Local vendor support for the software or availability of toll free numbers from the software company.

2) The number of installations of that particular software in your geographic area and nationally.

3) A user-friendly system. The software should be menu driven. It should have a relatively fast response time. It should not require frequent changes of screens to accomplish a particular task. On the whole it should be easy to use.

4) Internal security — The software should have a built-in security system, so that each authorized person has his or her own access code. In a system like that the physician will be able to limit the access of each employee to certain practice information.

5) Software flexibility — The software should come in modules. You may start with the business software but you should be able to add medical records, practice management, appointment scheduling and more later on.

6) It should also run on larger hardware systems, as you expand to accommodate your practice. The vendor should be able to do minor modification of the software to fit your practice need. Do not hire a programmer to design software just for you. It is not worth the price or the time.

Training

The vendor should provide initial training to your staff. The vendor should have support personnel to answer the questions you and your staff may have.

Maintenance Service

Computer systems do break down. Make sure you have a service contract for the hardware. The software company will usually charge by the hour for modifications of the software and future software support. The hardware contract is about 10% to 15% of the system cost per year.

Common Mistakes Physicians Make in Installing a System

1) Selecting the wrong hardware configuration.

2) Selecting a hardware configuration that is too small and not sufficiently expandable to meet increased workload in the future.

3) Selecting a poorly designed application software.

4) Selecting a vendor with little or no experience in medical office computer systems.

5) Selecting a system with poor ongoing software support.

6) Selecting a vendor with a poor equipment maintenance program.

Summary

Computers will be a necessity in the future in the offices of most physicians. Even though most physicians who are computerizing their offices now are doing it for business reasons, in the future most will use them for clinical and practice management capabilities. A solo practitioner will be able to buy a good computer system for $12,000 to $15,000, and small group practices will be able to buy it for $20,000 to $25,000. You do not have to know anything about a computer to computerize an office successfully. The office staff can be trained and the system can help increase efficiency.

If care is taken in selecting the proper system from a good vendor, the experience of computerizing an office will be a pleasurable learning experience.

Suggested Reading

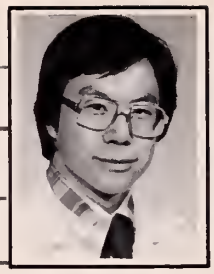
1) Lavin, John H.: What the ASIM found out about computers. Medical Economics, 1985;183-190.

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Loren F. Hiratska, M.D.

QUESTIONS AND ANSWERS



HEART TRANSPLANTATION

Loren F. Hiratzka, M.D., is co-director of the heart transplantation program at The University of Iowa. He led the organ recovery team which retrieved the donor heart for the first transplant in Iowa. Dr. Hiratzka is an associate professor of surgery. Here he answers questions about what has happened and what the future may hold.

On June 2, 1985, the first heart transplant in Iowa was performed at University Hospitals in Iowa City. The patient, 25-year-old Emerson Martin, had been told by physicians in late 1984 he would die within a year unless he had a heart transplant.

On July 6, 1985, Paul Sarnecki became Iowa's second heart transplant recipient in surgery performed at Mercy Hospital Medical Center in Des Moines. Sarnecki, 56, had an enlarged heart caused by several heart attacks.

In early November, 39-year-old Michael McKinnon became Mercy Hospital's second heart transplant patient. At this writing, McKinnon's post-operative condition is stable.

In this month's Q & A feature, Loren F. Hiratzka, M.D., associate professor of surgery, University of Iowa Hospitals and Clinics, discusses Iowa's first heart transplant and the outlook for future transplantations.

It is now 6 months since Emerson Martin received the first human heart transplant in Iowa. How is Mr. Martin getting along?

Mr. Martin has done well with gradually increasing activity. He is continuing an active physical rehabilitation program which includes bicycling on a regular basis. He has had no major rejection episodes since discharge.

What key factors signalled readiness by the University of Iowa to undertake heart transplantation?

An ongoing and successful renal and pancreatic transplantation program at University Hospitals provided experience in transplantation immunology, organ recovery and tissue typing. Recent results with cardiac transplantation in other centers indicating an acceptable morbidity and mortality using current immunosuppression medications made cardiac transplantation a logical extension of our health care services.

What is the makeup of the heart transplant team and what special preparations did it undergo?

Cardiac transplantation requires a multidisciplinary approach. Our team includes cardiovascular surgeons, cardiologists, pathologists and anesthesiologists as well as consultants in transplant immunology and infectious disease. Our nursing coordinator has facilitated educational programs for nurses in medical cardiology, the operating room and intensive care units. Our social worker was of great value in psycho-social evaluation of the patient and his family preoperatively and postoperatively.

Several members of the team spent time at

Stanford University Medical Center and the Medical College of Virginia to gain firsthand experience in an active cardiac transplant program. Laboratory models were used to refine surgical techniques. Donor organ procurement procedures were finalized by making actual "runs" to and from other locations in the Midwest.

We understand University Hospitals has a regional system for obtaining donor hearts and other donor organs. How does this system work?

The organ recovery team at University Hospitals participates in a computerized data bank and telephone hotline system set up by the North American Transplant Coordinators Organization (NATCO). When candidates for organ transplantation are identified, information regarding blood type, body size, priority rating in terms of urgency and other data are entered into this system.

When a donor is identified, the information is also entered into the data bank and a "matching" can be accomplished. Since the major limiting factor in cardiac and other organ transplantation is the limited availability of donors, this system was instituted to maximize utilization of donor organs.

Has University Hospitals identified other candidates for heart transplantation? If so, what factors will determine when these candidates will receive transplants?

Patients are currently being evaluated in the Heart Failure Clinic, directed by Drs. Maryl Johnson and Wayne Leimbach of the Division of Cardiology. This clinic provides specialized care of chronic heart failure patients and screens patients who might be potential heart transplant recipients.

General guidelines for acceptance include evidence of severe refractory heart failure without significant other system disease and an estimate that the patient will not survive beyond 6 to 12 months without cardiac transplantation. Patients must also demonstrate the ability to follow a complex immunosuppression medication regimen. The patient must be free of acute or chronic infection and not have significant pulmonary hypertension as demonstrated by heart catheterization.

Once a patient is accepted for transplantation, the wait for an appropriate donor organ begins. Nationwide experience indicates over 25% of the candidates will die while waiting for a donor organ.

What are the greatest obstacles which must be overcome before heart transplantation can move out of the experimental realm?

Given a 70-80% 1-year survival and 50-60% 5-year survival for patients now undergoing cardiac transplantation and the excellent quality of life enjoyed by over 90% of the survivors, we must consider cardiac transplantation a clinically acceptable form of treatment for selected patients with severe cardiac failure.

Generally, the technical aspects of operation and myocardial biopsy are quite straightforward. The treatment of rejection by immunosuppressive medications is the area where improvements must be made to increase patient survival rates and reduce infective problems and other side effects related to medications. That some third party payers are willing to cover expenses related to cardiac transplantation is an indicator of clinical acceptance.

How do you see the future of heart transplantation in Iowa?

As public awareness and acceptance of cardiac transplantation as a treatment for otherwise fatal cardiac disease increases, we expect more patients will be evaluated for cardiac transplantation. We hope this growing patient population will lead to an increase in public awareness and an increase in donor identification and availability.

Donor Hotline

The North American Transplant Coordinators Organization now has an 800/24-DONOR hotline for physicians and other health care professionals. The hotline is staffed 24 hours a day by organ procurement specialists who refer potential postmortem organ donors and disseminate information concerning donation and procurement of organs for transplantation.



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Iowa Receives Major Grant For Cochlear Implant Study

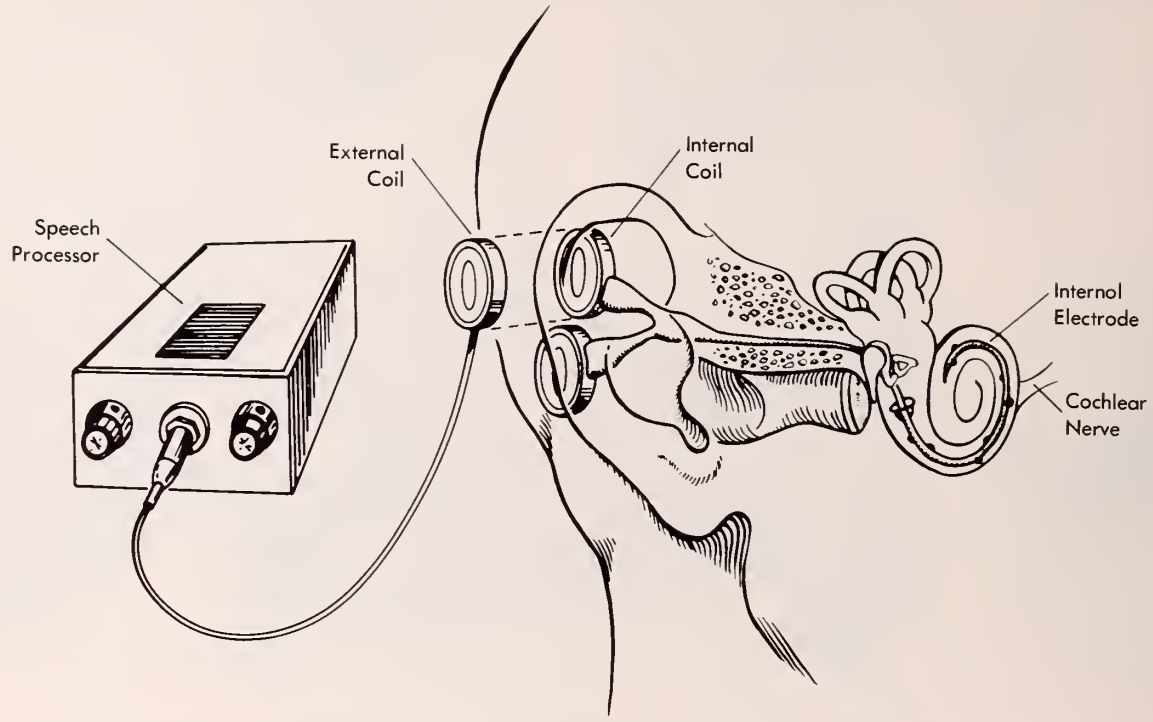
NEW POTENTIAL for profoundly deaf people to hear again — and understand varying amounts of speech — received a major boost this fall when hearing specialists at The University of Iowa Hospitals and Clinics and the UI College of Medicine received a $2.6 million grant to pursue further their internationally-recognized work on cochlear implants.

The 5-year grant was awarded by the National Institute of Neurologic Communicative Disorders and Stroke within the National Institutes of Health. Brian McCabe, M.D., professor and head, Department of Otolaryngology — Head & Neck Surgery, is a co-investigator in the grant study, with Bruce Gantz, M.D., associate professor, as principal investigator, and Richard Tyler, Ph.D., also as a co-investigator.

In photo above Ruth Sabel, deaf for 10 years, smiles when she realizes she can hear during a successful stimulator test performed several weeks after her cochlear implant. Surrounding Mrs. Sabel are, from left, Dr. Bruce Gantz, Dr. Brian McCabe and clinical audiologist Mary Lowder.

THE IOWA MEDICAL FOUNDATION HAS DESIGNATED THIS ARTICLE AS THE HENRY ALBERT SCIENTIFIC PRESENTATION FOR THE MONTH OF DECEMBER 1985

Cochlear Implant System



COCHLEAR implant system — A battery-powered speech processar receives sound and sends on electricol signol ta an externol cail behind the ear. The external cail transmits a radio signol through the skin ta an internal coil. The internol coil converts the radio signol to on electricol signol, which is carried to the hearing (cochleor) nerve by a wire implanted within the middle ond inner ear.

"The cochlear implant is the first electrical prosthesis to nearly replace one of the body's senses," said Dr. Gantz.

"These devices electrically stimulate the cochlear nerve through small wires implanted in the inner ear," Dr. Gantz explains. "A pocket-sized speech processor — worn outside the body — receives sound and generates the electrical signals. The speech processor substitutes for the non-functioning inner ear hair cell system that normally changes mechanical acoustic signals (transmitted by the middle ear bones) into electrical signals which are perceived by the brain as sound. In the past, we attributed acquired deafness to nerve loss, but it has been recently recognized that the major problem is loss of hair cells.

"Several types of cochlear implants have been developed worldwide with different ways of stimulating the cochlear nerve," Dr. Gantz said, "but it is not known which implant is best, because there is no uniform method of testing and comparing them."

During the next 5 years, hearing specialists at University Hospitals will develop tests to determine the characteristics of various implant devices, which people are candidates for an implant, and which cochlear implant works best for a particular patient.

International Leader

The University of Iowa Hospitals and Clinics has been an international leader in the field of cochlear implant testing for the past 5 years. Ear specialists have implanted cochlear implant devices into 17 patients and analyzed their performance by intricate computer analyses — most of which have been developed under the direction of Dr. Tyler.

"The computer-based analyses show great promise for evaluating the various cochlear implants," Tyler said.

Results of implants previously performed at University Hospitals indicate that cochlear implants provide sound awareness and greatly enhance lipreading ability. The more sophisticated implants allow patients to understand phrases and sentences. Some patients can use the telephone.

Multidisciplinary Approach

Evaluation of cochlear implants requires a multidisciplinary approach involving otolaryngology, speech pathology and audiology, psychophysics, speech production, psychology, electrophysiology and aural rehabilitation.

In addition to Drs. Gantz, McCabe and Tyler, other health professionals participating in the cochlear implant grant study are Julia Davis, Ph.D., and Paul Abbas, Ph.D., professors of speech pathology; and John Knutson, Ph.D., Bill Cooper, Ph.D., and James Hinrichs, Ph.D., professors of psychology.

Patient Participation

Candidates are now being sought for the cochlear implant study. *Participants will have all medical costs paid by the grant and the Clinical Research Center, including the cost of the implant device, hospitalization, rehabilitation and follow-up.*

Eligible participants must be profoundly deaf in both ears, receive no benefit from a hearing aid, have lost their hearing after development of speech, and be at least 18 years old.

Lion's Support

Testing of cochlear implants at University Hospitals has previously received strong support from the Lions of Iowa and the International Lions Sight and Deafness Foundation.

"Without the moral and financial support of these groups, we would not have been in a position to receive the NIH grant," Dr. McCabe said. "This is an example of how locally raised seed money can help bring large amounts of federal money into the state."

Information

Any Iowa physician who would like more information about the cochlear implant grant study should contact: Bruce Gantz, M.D., Department of Otolaryngology — Head & Neck Surgery, University of Iowa Hospitals and Clinics, Iowa City, Iowa 52242 (telephone 319/356-2815 or 356-2173).



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Marion E. Alberts, M.D.

COMMENTING EDITORIALLY



CARING: THEME FOR THE SEASON

THE DOORS of a hospital never close. Illness takes no vacation. Care-givers in the hospitals provide their skills and talents every hour of every day. Weekends and holidays are not exempted. Hospital patients need continuing care. Christmas is no exception.

I reflect upon many Christmas Day mornings with patients in the hospital. It is unfortunate sickness must keep a child from home and family on such a joyous occasion. Yet the amazing faith of a child overcomes the disappointment of confinement in a hospital bed. Often I have been impressed by the apparent inability of parents to cope while the child makes the best of the situation. Gifts are as welcome at the hospital as they are at home. The often warm courtesies, the tearful gleam in their eyes, the brave smiles of the children are humbling to anyone caring for them.

There is a lesson to be learned from such an experience. Our profession is unique in the stresses it witnesses and experiences. We become involved in the joys of birth and the sorrow of death. We experience the many manifestations of patient reaction to injury and illness. We become involved in the happiness of recovery as well as the disappointment of therapeutic failures. Yet we often present an appearance of being aloof to the miseries that surround us; that is an illusion.

We feel very deeply the sorrows visited upon our patients by the devastation of illness. We have wept with our patient-friends; we grieve their loss as well. Yet all are not equal in such sentiment. As in any segment of society, there are those who hold themselves above the feelings of others. We know colleagues who seemingly cannot feel compassion. Their association with patients appears almost business-like rather than professionally sympathetic.

At this season of love and goodwill let us renew our purpose in the calling to minister to the illness of mankind. We are involved in multiple complex concerns within our profession involving medical-legal factors as well as third party interventions, but our mission remains the same.

Seasons Greetings to all our readers. May the holidays bring joy and happiness that extend into the New Year. — M.E.A.

SOCRATES WAS NO DUMMY

ON A William Buckley *Firing Line* TV program a year or so ago, Mortimer Adler, one of our most distinguished contemporary philosophers and educators, made a casual derogatory reference to doctors as being primarily interested in their compensation rather than their true vocation of serving a good end. His denigration of doctors (as well as lawyers and engineers) evoked laughter from the audience.

Why would someone of the stature of Mortimer Adler indict the medical profession in this manner? What, if anything, has been done wrong? Is there, in fact, an element of truth in his charge?

In 1982, Hanna Gray, Ph.D., president of the University of Chicago, gave the commencement address at the Mayo Medical School graduation exercises. She mentioned the ambivalence of society, through the ages, toward doctors. Since we are particularly concerned with the negative at this time (which usually out-

weighs the positive, anyway), let us refer to a few of Dr. Gray's remarks:

". . . around 500 B.C., the great philosopher Heraclitus had said, 'Doctors cut, burn and torture the sick, and then demand of them an undeserved fee for such services.' . . . . in the 17th century, LaBruyere remarked that, 'As long as men are liable to die and are desirous to live, a physician will be made fun of but will be well paid.' . . . Benjamin Franklin put it still more succinctly: 'God heals, and the doctor takes the fees.' And here is a voice from the 20th century, that of Anthony Burgess, who said, 'Keep away from physicians; it is all probing and guessing and pretending with them. They leave it to nature to cure in her own time, but they take the credit as well as very fat fees.'"

One who reads the Bible will recall these words of St. Mark: The woman "had suffered many things from many physicians; and had spent all that she had, and was nothing the better, but rather worse." Nor can one forget that Cicero admonished his sick slave to be sure to give the doctor money so that the doctor's "diligence will be increased."

A COMMON element, with disparaging overtones, running through all of these comments is the matter of fees. Also — who, in this day and age, is not aware that the *average* income of doctors is reported to be over $100,000 a year — a sum that still sounds like a lot of money to most people? And could it possibly be that doctors aggravate matters by rather flamboyant displays of affluence? With all this in mind, is it reasonable to conclude that money is the common denominator responsible for the poor public relations of the medical profession? Well maybe and maybe not. There could be something else.

A certain physician, who is occasionally right, has been heard to offer another explanation. He points out that it is human nature to resent circumstances in which one is held captive — as the sick are when forced by fear and apprehension to place themselves under the control of a doctor. The inevitable result, he concludes, is ill-humor and criticism, whether in 500 B.C. or now, or any time in between. Is this, then, rather than money, the root of the problem?

You can take your pick, but whatever the cause of the enduring criticism of doctors, one more question remains: What to do?

Socrates made quite a name for himself by asking questions. As far as we know, he didn't give any answers. So why should we? — DANIEL F. CROWLEY, M.D.

Historical Vignettes

LOOKING BACK

In cooperation with the IMS Historical Committee, we are commemorating our 75th anniversary by saluting the past.

ELECTROCARDIOGRAPHY

A STILL MORE remarkable means of studying the heart is by the aid of Einthoven's electrocardiography. Minute electric currents, generated by the action of the heart, are communicated to a microscopic thread suspended in a strong magnetic field. The movements of this thread, the string galvanometer, when magnified and photographed, constitute the graph known as the electrocardiogram. By the study of these curves much has been learned as to the heart's movements in health and disease. . . . The Einthoven apparatus is not, however, adapted to the needs of the general practitioner. In the first place it is expensive. A complete outfit, installed, costs $1500 to $2000. . . . And the practical results are as yet rather meagre. But for research workers, and especially in hospitals and physiologic laboratories, the use of the string galvanometer, as of the polygraph, is highly desirable, as from a study of the heart by such means, there will result a more accurate knowledge of the physiology and pathology of the organ, and a more rational therapy. — **James B. Herrick, M.D.,** Chicago, Illinois, *Pain in Disease of the Heart*. JOURNAL OF THE IOWA STATE MEDICAL SOCIETY 1911; Vol 1:149-162.

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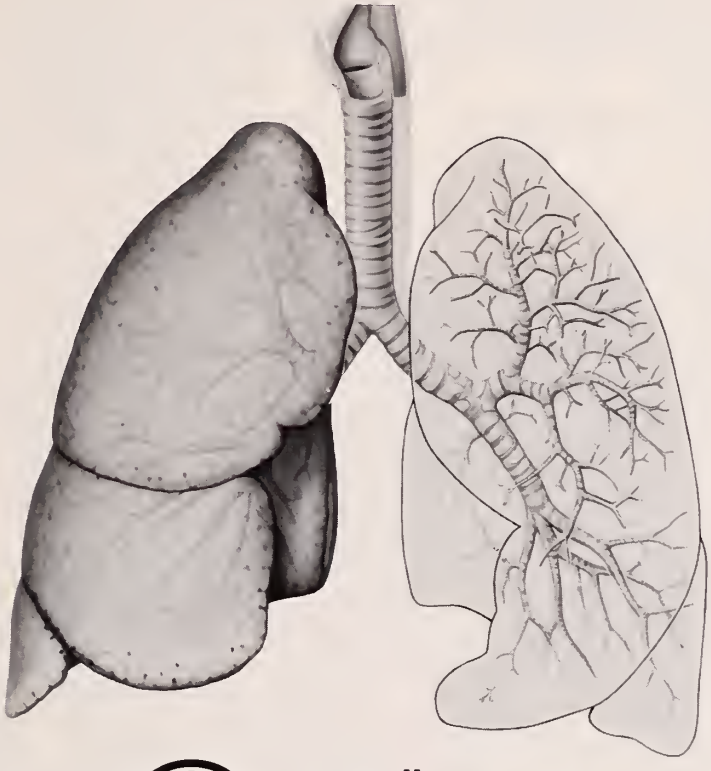
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Brief Summary. Consult the package literature for prescribing information.

Indications and Usage: Ceclor* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae (Diplococcus pneumoniae), Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci)

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Ceclor

Contraindication: Ceclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Warnings: IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS, AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES

Antibiotics, including Ceclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

Precautions: *General Precautions* — If an allergic reaction to Ceclor* (cefaclor, Lilly) occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids

Prolonged use of Ceclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug

Ceclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended

As a result of administration of Ceclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis

Usage in Pregnancy — Pregnancy Category B — Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Ceclor* (cefaclor, Lilly). There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers — Small amounts of Ceclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one hour. The effect on nursing infants is not known. Caution should be exercised when Ceclor is administered to a nursing woman.

Usage in Children — Safety and effectiveness of this product for use in infants less than one month of age have not been established

Adverse Reactions: Adverse effects considered related to therapy with Ceclor are uncommon and are listed below

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

Causal Relationship Uncertain — Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

Hepatic — Slight elevations in SGOT, SGPT, or alkaline phosphatase values (1 in 40).

Hematopoietic — Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

Renal — Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

[0617B2R]

Note: Ceclor* (cefaclor, Lilly) is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

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Elevations of transaminases with and without concomitant elevations in alkaline phosphatase and bilirubin have been reported. Such elevations may disappear even with continued treatment; however, four cases of hepatocellular injury by verapamil have been proven by rechallenge. Periodic monitoring of liver function is prudent during verapamil therapy. Patients with atrial flutter or fibrillation and an accessory AV pathway (e.g. W-P-W or L-G-L syndromes) may develop increased antegrade conduction across the aberrant pathway bypassing the AV node, producing a very rapid ventricular response after receiving ISOPTIN (or digitalis). Treatment is usually D.C.-cardioversion, which has been used safely and effectively after ISOPTIN. Because of verapamil's effect on AV conduction and the SA node, 1° AV block and transient bradycardia may occur. High grade block, however, has been infrequently observed. Marked 1° or progressive 2° or 3° AV block requires a dosage reduction or, rarely, discontinuation and institution of appropriate therapy depending upon the clinical situation. Patients with hypertrophic cardiomyopathy (IHSS) received verapamil in doses up to 720 mg/day. It must be appreciated that this group of patients had a serious disease with a high mortality rate and that most were refractory or intolerant to propranolol. A variety of serious adverse effects were seen in this group of patients including sinus bradycardia, 2° AV block, sinus arrest, pulmonary edema and/or severe hypotension. Most adverse effects responded well to dose reduction and only rarely was verapamil discontinued. **Precautions:** ISOPTIN should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of excessive pharmacologic effects. Studies in a small number of patients suggest that concomitant use of ISOPTIN and beta blockers may be beneficial in patients with chronic stable angina. Combined therapy can also have adverse effects on cardiac function. Therefore, until further studies are completed, ISOPTIN should be used alone, if possible. If combined therapy is used, close surveillance of vital signs and clinical status should be carried out. Combined therapy with ISOPTIN and propranolol should usually be avoided in patients with AV conduction abnormalities and/or depressed left ventricular function. Chronic ISOPTIN treatment increases serum digoxin levels by 50% to 70% during the first week of therapy, which can result in digitalis toxicity. The digoxin dose should be reduced when ISOPTIN is given, and the patients should be carefully monitored to avoid over- or under-digitalization. ISOPTIN may have an additive effect on lowering blood pressure in patients receiving oral antihypertensive agents. Disopyramide should not be given within 48 hours before or 24 hours after ISOPTIN administration. Until further data are obtained, combined ISOPTIN and quinidine therapy in patients with hypertrophic cardiomyopathy should probably be avoided, since significant hypotension may result. Clinical experience with the concomitant use of ISOPTIN and short- and long-acting nitrates suggest beneficial interaction without undesirable drug interactions. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. *Pregnancy Category C:* There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor and delivery only if clearly needed. It is not known whether verapamil is excreted in breast milk; therefore, nursing should be discontinued during ISOPTIN use. **Adverse Reactions:** Hypotension (2.9%), peripheral edema (1.7%), AV block: 3rd degree (0.8%), bradycardia: HR < 50/min (1.1%), CHF or pulmonary edema (0.9%), dizziness (3.6%), headache (1.8%), fatigue (1.1%), constipation (6.3%), nausea (1.6%), elevations of liver enzymes have been reported (See *Warnings.*) The following reactions, reported in less than 0.5%, occurred under circumstances where a causal relationship is not certain: ecchymosis, bruising, gynecomastia, psychotic symptoms, confusion, paresthesia, insomnia, somnolence, equilibrium disorder, blurred vision, syncope, muscle cramp, shakiness, claudication, hair loss, macules, spotty menstruation. **How Supplied:** ISOPTIN (verapamil HCl) is supplied in round, scored, film-coated tablets containing either 80 mg or 120 mg of verapamil hydrochloride and embossed with "ISOPTIN 80" or "ISOPTIN 120" on one side and with "KNOLL" on the reverse side. 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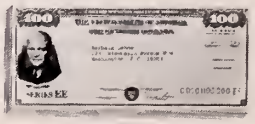


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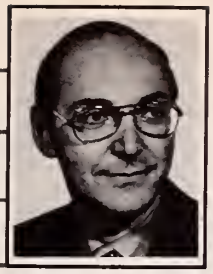


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Richard M. Caplan, M.D.

OUR MAN IN EDUCATION



HONEYBEE FECES

I'LL BET you haven't given a lot of thought to honeybee feces, have you? Well, I can't say I have either, to be honest with you. But the matter turns out to be the subject of a fascinating story in a recent issue of *Scientific American* (Sep. 1985, pp. 128-137). There is a lot to read between the lines of that carefully worded scientific article. Between those lines are implications about international politics, cold war accusations, and scientific accuracy and honesty.

It all has to do with "yellow rain." In September 1981 our Secretary of State, Alexander M. Haig, announced dramatically at a Berlin press conference that "we now have physical evidence from southeast Asia which has been analyzed and found to contain abnormally high levels of 3 potent mycotoxins — poisonous substances not indigenous to the region and which are highly toxic to man and animals." These alleged poisonous substances were said to have been contained in "yellow rain," small yellowish spots accumulating on vegetation in parts of southeast Asia. The U. S. Army laboratories did not detect those toxins but they were reported by a laboratory at the University of Minnesota, where the Army had sent samples.

The authors of this article have conducted some diligent, clever and striking investigations related to the nature of honeybee feces (largely the husks of pollen grains from which the proteinaceous content has been extracted during digestion), the swarming behavior of bees, the size of the particles, the geographical habitats of various bees of southeast Asia, the patterns of drift of the yellow rain, etc. Their studies led to an alternative explanation that spots of yellow rain are actually dots of dried honeybee feces.

I invite you to read the story. It is an excellent example of the scientific process — both method and inference — not ultimately proving that a foreign power did not spread some sort of poisonous yellow rain, but casting great doubt on the poisoning theory while providing an alternative, well-supported explanation which rings remarkably true.

ALL THIS RECALLS to my mind the discovery of the *Legionella* genus of organisms that proved responsible for the epidemic of legionnaire's disease in Philadelphia some years ago. You may remember that era of public agitation when people thought the illness might have been due to some micro-organism, but also speculated about the possibility of a material distributed by a foreign government, or metal poisoning, or Aspergillus toxins, and still other splendid speculations. (To hypothesize is perfectly legitimate in scientific work. To do so energizes investigation that will permit acceptance or rejection of the hypothesis.) Something similar happened when the acquired immunodeficiency syndrome appeared in 1981. The detective work needed, that elucidated a specific virus which now seems clearly responsible for this fascinating illness, was done with incredible speed, it seems to me. These are just examples of the process of biomedical problem-solving.

Each of us, as we go about our medical work, is continually trying to untangle problems of diagnosis or therapy. Solving most of these riddles combines new and old ingredients. I hadn't known, but bee keepers do, about the purifying flights of bees who leave the hive at the winter's end — how they fly forth and discharge their intestinal content, producing a rain of tiny droplets on vegetation. When such

(Please turn to page 561)

Dr. Caplan is Associate Dean for Continuing Medical Education at The University of Iowa College of Medicine.

University of Iowa Hospitals & Clinics

DRUG THERAPY REVIEW

Reynold Spector, M.D., Editor

TERFENADINE, A NONSEDATING H_1-ANTIHISTAMINE

THERE ARE TWO CLASSES of histamine receptors, H_1 and H_2. It is thought that histamine H_1-receptors are involved in contraction of smooth muscle, increased capillary permeability, the formation of wheal and flare, immediate hypersensitivity, and certain functions in the brain; whereas, histamine H_2-receptors are involved in gastric acid secretion.[1] H_1-antihistamines are used in the treatment of a number of allergic as well as nonallergic conditions, such as Parkinson's disease and motion sickness; and H_2-antihistamines are used in the treatment of gastric hyperacidity conditions.

A well-known side effect of antihistamines, which block H_1-receptors, is sedation and psychomotor impairment.[2] This is probably related to their ease of penetration of the blood-brain barrier. The drowsiness associated with H_1-blockers may be used therapeutically, allowing the patient to sleep, but more often is an undesired side effect impairing alertness and ability to operate machinery. The sedation may also lead to decreased compliance. In this paper, terfenadine, a new H_1-blocker with little or no sedative effects, is reviewed. The chemical name of this agent is α-[4-(1,1-dimethylethyl)phenyl]-4-(hydroxydiphenymethyl)-1-piperidinebutane.

This information for Iowa physicians is furnished and sponsored by the University of Iowa Hospitals and Clinics.

Pharmacokinetics

Terfenadine is well absorbed in man, and peak blood levels after oral administration are attained at 1 to 2 hours.[3] The agent is extensively (97%) bound to plasma proteins. Tissue distribution has not been studied in man, but in animals the highest concentrations of drug have been found in the liver, lung, and gallbladder.[4] Very low concentrations of drug are found in the brain.

There is a biphasic disappearance of the drug from plasma with a distribution half-life of about 3.5 hours and an elimination half-life of 16 to 32 hours.[4] Terfenadine is rapidly and extensively (99.5%) biotransformed in man into 2 main metabolites.[3] One of these, a carboxylic acid analog, has been found to possess one-third the antihistaminic activity of terfenadine.[4] Terfenadine is eliminated via the biliary system in the feces (60%) and by the urinary system (40%).[3]

Pharmacodynamics

Based on receptor binding techniques in vitro, terfenadine has been shown to have specific and selective H_1-antihistamine activity.[4] There is no significant binding to H_2-receptors, adrenergic, or muscarinic receptors. In vitro, terfenadine does not preferentially block peripheral histamine H_1-receptors compared to brain H_1-histamine receptors. In vivo, terfenadine does not cross the blood-brain barrier, and therefore does not occupy cerebral H_1-receptors when giving to living animals.[5]

A standard method to study H_1-histamine receptor antagonists in humans is to evaluate their ability to inhibit the wheal and flare reac-

(Please turn to page 554)

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INDICATIONS AND USAGE: SORBITRATE (isosorbide dinitrate) is indicated for the treatment and prevention of angina pectoris. All dosage forms of isosorbide dinitrate may be used prophylactically to decrease frequency and severity of anginal attacks and can be expected to decrease the need for sublingual nitroglycerin.

The sublingual and chewable forms of the drug are indicated for acute prophylaxis of angina pectoris when taken a few minutes before situations likely to provoke anginal attacks. Because of a slower onset of effect, the oral forms of isosorbide dinitrate are not indicated for acute prophylaxis.

CONTRAINDICATIONS: SORBITRATE is contraindicated in patients who have shown purported hypersensitivity or idiosyncrasy to it or other nitrates or nitrites. Epinephrine and related compounds are ineffective in reversing the severe hypotensive events associated with overdose and are contraindicated in this situation.

WARNINGS: The benefits of SORBITRATE during the early days of an acute myocardial infarction have not been established. If one elects to use organic nitrates in early infarction, hemodynamic monitoring and frequent clinical assessment should be used because of the potential deleterious effects of hypotension.

PRECAUTIONS: General: Severe hypotensive response, particularly with upright posture, may occur with even small doses of SORBITRATE. The drug should therefore be used with caution in subjects who may have blood volume depletion from diuretic therapy or in subjects who have low systolic blood pressure (eg, below 90 mmHg). Paradoxical bradycardia and increased angina pectoris may accompany nitrate-induced hypotension. Nitrate therapy may aggravate the angina caused by hypertrophic cardiomyopathy.

Marked symptomatic, orthostatic hypotension has been reported when calcium channel blockers and organic nitrates were used in combination. Dose adjustment of either class of agents may be necessary.

Tolerance to this drug and cross-tolerance to other nitrates and nitrites may occur. Tolerance to the vascular and antianginal effects of isosorbide dinitrate or nitroglycerin has been demonstrated in clinical trials, experience through occupational exposure, and in isolated tissue experiments in the laboratory. The importance of tolerance to the appropriate use of isosorbide dinitrate in the management of patients with angina pectoris has not been determined. However, one clinical trial using treadmill exercise tolerance (as an end point) found an 8-hour duration of action of oral isosorbide dinitrate following the first dose (after a 2-week placebo washout) and only a 2-hour duration of effect of the same dose after 1 week of repetitive dosing at conventional dosing intervals. On the other hand, several trials have been able to differentiate isosorbide dinitrate from placebo after 4 weeks of therapy and, in open trials, an effect seems detectable for as long as several months.

Tolerance clearly occurs in industrial workers continuously exposed to nitroglycerin. Moreover, physical dependence also occurs since chest pain, acute myocardial infarction, and even sudden death have occurred during temporary withdrawal of nitroglycerin from the workers. In clinical trials in angina patients, there are reports of anginal attacks being more easily provoked and of rebound in the hemodynamic effects soon after nitrate withdrawal. The relative importance of these observations to the routine, clinical use of isosorbide dinitrate is not known. However, it seems prudent to gradually withdraw patients from isosorbide dinitrate when the therapy is being terminated, rather than stopping the drug abruptly.

Information for Patients: Headache may occur during initial therapy with SORBITRATE. Headache is usually relieved by the use of standard headache remedies or by lowering the dose and tends to disappear after the first week or two of use.

Drug Interactions: Alcohol may enhance any marked sensitivity to the hypotensive effect of nitrates.

Isosorbide dinitrate acts directly on vascular smooth muscle; therefore, any other agent that depends on vascular smooth muscle as the final common path can be expected to have decreased or increased effect depending on the agent.

Carcinogenesis, Mutagenesis, Impairment of Fertility: No long-term studies in animals have been performed to evaluate the carcinogenic potential of this drug. A modified two-litter reproduction study in rats fed isosorbide dinitrate at 25 or 100 mg/kg/day did not reveal any effects on fertility or gestation or any remarkable gross pathology in any parent or offspring fed isosorbide dinitrate as compared with rats fed a basal-controlled diet.

Pregnancy Category C: Isosorbide dinitrate has been shown to cause a dose-related increase in embryotoxicity (increase in mummified pups) in rabbits at oral doses 35 and 150 times the maximum recommended human daily dose. There are no adequate and well-controlled studies in pregnant women. SORBITRATE should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when SORBITRATE is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of SORBITRATE in children has not been established.

ADVERSE REACTIONS: Adverse reactions, particularly headache and hypotension, are dose-related. In clinical trials at various doses, the following have been observed.

Headache is the most common (reported incidence varies widely, apparently being dose-related, with an average occurrence of about 25%) adverse reaction and may be severe and persistent. Cutaneous vasodilation with flushing may occur. Transient episodes of dizziness and weakness, as well as other signs of cerebral ischemia associated with postural hypotension, may occasionally develop (the incidence of reported symptomatic hypotension ranges from 2% to 36%). An occasional individual will exhibit marked sensitivity to the hypotensive effects of nitrates and severe responses (nausea, vomiting, weakness, restlessness, pallor, perspiration, and collapse) may occur even with the usual therapeutic dose. Drug rash and/or exfoliative dermatitis may occasionally occur. Nausea and vomiting appear to be uncommon. Case reports of clinically significant methemoglobinemia are rare at conventional doses of organic nitrates. The formation of methemoglobin is dose-related and, in the case of genetic abnormalities of hemoglobin that favor methemoglobin formation, even conventional doses of organic nitrate could produce harmful concentrations of methemoglobin.

DOSAGE AND ADMINISTRATION: For the treatment of angina pectoris, the usual starting dose for sublingual SORBITRATE is 2.5 to 5 mg; for chewable tablets, 5 mg; for oral (swallowed) tablets, 5 to 20 mg; and for controlled-release forms, 40 mg.

SORBITRATE should be titrated upward until angina is relieved or side effects limit the dose. In ambulatory patients, the magnitude of the incremental dose increase should be guided by measurements of standing blood pressure.

The initial dosage of sublingual or chewable SORBITRATE for prophylactic therapy in angina pectoris patients is generally 5 or 10 mg every 2 to 3 hours. Adequate controlled clinical studies demonstrating the effectiveness of chronic maintenance therapy with these dosage forms have not been reported.

SORBITRATE in oral doses of 10 to 40 mg given every 6 hours or in oral controlled-release doses of 40 to 80 mg given every 8 to 12 hours is generally recommended. The extent to which development of tolerance should modify the dosage program has not been defined. *The oral controlled-release forms of isosorbide dinitrate should not be chewed.*

DOSAGE FORMS AVAILABLE: Sublingual Tablets (2.5, 5, 10 mg); Chewable Tablets (5, 10 mg); Oral Tablets (5, 10, 20, 30, 40 mg); Sustained Action Tablets (40 mg).

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DRUG THERAPY REVIEW

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tion to histamine given intradermally. Hüther *et al* examined 12 subjects using this technique in a double-blind, randomized crossover study to establish the optimal oral dosage for terfenadine.[6] They found that 4 to 6 hours after oral doses of 60 to 200 mg of terfenadine, histamine induced wheal was totally blocked. After repeated doses of terfenadine (60 mg) at intervals of 8 or 12 hours, inhibition of histamine induced wheal was still significant at 12 hours. They concluded that the effective dose of terfenadine was 60 mg every 12 hours.

Histamine is a neurotransmitter in mammalian brain, and histaminergic neurons in the brain may be involved in the control of states of wakefulness. It is known that most H_1-blockers have the side effect of sedation. These agents also produce characteristic changes in the EEG pattern resembling those seen after the administration of barbiturates.[5] This has been attributed to various mechanisms including the inhibition of histamine-N-methyl transferase and the blockade of central histaminergic receptors.[7] Several studies have shown that terfenadine does not impair psychomotor performance or adversely affect subjective feelings in contrast to other antihistamines. It also fails to evoke the characteristic EEG changes seen with sedative antihistamines, when given in therapeutic doses.[4] Barlow *et al* reviewed studies on the safety of terfenadine.[8] Most were controlled and double-blind in design, and employed doses of terfenadine of 120 mg or more per day. They noted a 12.6% incidence of sedation in the patients treated with terfenadine, compared to an 11.4% incidence of sedation with placebo. The other antihistamines used in the studies — chlorpheniramine, dexchlorpheniramine, and clemastine — had incidences of sedation of 26.4%, 24.6%, and 22.4%, respectively. Nicholson and Stone studied terfenadine and astemizole (another nonsedating antihistamine) in 6 subjects.[7] Both were found to be free of CNS side effects, while tripolidine, the reference antihistamine, caused increased sleepiness, dullness, lack of concentration, and a decrease in performance.

Concomitant administration of other drugs or agents that possess CNS depressant activity

may potentiate the sedative effects of antihistamines. Moser *et al* compared the effects of single oral doses of terfenadine, diphenhydramine, and placebo alone and in combination with diazepam or alcohol on psychomotor skills and subjective feelings in a randomized, crossover double-blind study.[9] They found that terfenadine in doses of 60 mg, 120 mg, and 240 mg had no effect on subjective feelings and psychomotor skills as opposed to diphenhydramine. In addition, no additive effect was seen when terfenadine was given with alcohol or diazepam.

Therapeutic Trials

The efficacy of terfenadine in treating allergic rhinitis has been studied by a number of investigators. Melillo reported a multicenter trial of terfenadine, dexclorpheniramine, and placebo.[10] Terfenadine was found to be as effective as dexchlorpheniramine and more effective than placebo in decreasing the patient's symptoms of sneezing, rhinorrhea, nasal congestion, and itchy eyes and throat. When evaluated subjectively by a physician, terfenadine and dexchlorpheniramine had similar efficacy, and both were better than placebo. The incidence of sedation in this study was 55% for dexchlorpheniramine, 14.6% for terfenadine, and 10.5% for placebo.

In another study, also double-blind and placebo controlled, terfenadine, dexchlorpheniramine, and placebo were compared in more than 300 patients for a total of 8 days.[11] Dexchlorpheniramine and terfenadine had similar global efficacy as evaluated by the investigator. Terfenadine had an excellent response when assessed by the patients in improving their symptoms of sneezing, nasal discharge, eye itching, and nose itching. Eleven percent of the patients treated with terfenadine reported sedation, while 13% and 25% of the patients treated with placebo and dexchlorpheniramine, respectively, reported sedation.

In the only negative study to date, Howarth and Holgate compared terfenadine, astemizole, and placebo in the treatment of hay fever in a double-blind study involving 90 patients.[12] Astemizole was significantly better than placebo and terfenadine in alleviating symptoms of rhinorrhea, sneezing, and itchy eyes. They are unable to show any significant beneficial effect of terfenadine over placebo.

Bazex *et al* studied the effects of terfenadine in 136 patients with allergic skin conditions.[13] These included urticaria, dermographia, toxidermia, eczema, prurigo, and erthyroderma. The study was double-blind and placebo controlled. The patients received either terfenadine 60 mg BID, clemastine 1 mg BID, or placebo for 2 weeks. All corticosteroids were discontinued. At the end of 2 weeks, 42% of the patients treated with terfenadine, 38% of the patients treated with clemastine, and 37% of the patients treated with placebo were asymptomatic. Their overall results using terfenadine were comparable to other antihistamines, as well as the reference drug.

In another study involving 24 patients suffering from chronic idiopathic urticaria, terfenadine 60 mg BID and placebo were compared in a double-blind crossover design.[14] Nineteen patients improved markedly on terfenadine, but only 1 patient improved on placebo. No side effects were reported.

Adverse Effects

In the review by Barlow *et al* of clinical studies involving more than 2,300 patients where terfenadine was used at doses of 120 mg or more per day, only 1 patient had to discontinue the antihistamine because of a possible adverse reaction.[8] This patient had a dermatological condition that was exacerbated and it was thought to be secondary to a hypersensitivity reaction. The incidence of sedation was similar to that reported with placebo. Dryness of the nose, mouth, or throat was reported in 2.6% of patients on terfenadine and in 2.2% of patients treated with placebo. No abnormalities in laboratory values were found.

Cost

Terfenadine, which requires a prescription, is considerably more expensive than the older H_1-antihistamines. The cost to the pharmacy of a one-month supply of terfenadine at a dose of 60 mg BID is almost $25, whereas the cost of a one-month supply of the over-the-counter chlorpheniramine at a dose of 4 mg QID is about $4. Thus, the use of terfenadine should

(Please turn to page 556)



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(Continued from page 555)

be limited to those patients where the sedative effects of the older H_1-antihistamines are a problem.

Conclusions

Terfenadine (Seldane®) is a new antihistamine that has been shown to be effective in the treatment of allergic rhinitis and allergic skin conditions. The manufacturer's recommended dose for adults and children 12 years and older is 60 mg twice daily. It does not penetrate the blood-brain barrier and therefore is nonsedating. Furthermore, it does not add to the CNS depression caused by alcohol or diazepam. Its other side effects are minimal, even when it is used in large doses. Its biggest drawback is its high cost. — THERESE M. KITT, M.D., *Fellow, Clinical Pharmacology, Department of Internal Medicine* and H. E. WILLIAMSON, PH.D., *Professor, Department of Pharmacology.*

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Medical Developments

NEWS/PRODUCTS, PROGRAMS, ETC.

NORMODYNE® IN NEW FORM — Schering Laboratories recently introduced a new 100 mg Normodyne® tablet, making this antihypertensive medication available in 100, 200, and 300 mg strengths. This new size will ease the initial dose-titration phase for the patient.

VACCINATION RECOMMENDED — Mead Johnson and Company has begun distribution of a Hemophilus and polysaccharide vaccine ("b-Capsa I") to prevent Hemophilus influenzae Type B (Hib) diseases. The 2 most common and lethal Hib diseases are meningitis and epiglottitis. The Center for Disease Control (CDC) has recommended vaccination primarily for children aged 2-6 years, and for children of high risk at 18 months. It is to be emphasized this vaccine does NOT protect against H. influenza type A, which is commonly an etiologic factor in otitis media.

NEW PENICILLIN — Roche Laboratories has introduced Coactin® (amdinocillin), a new penicillin effective in the treatment of urinary tract infections due to E. coli, K. Pneumoniae, Klebsiella species, and Enterobacter species; also E. coli bacteremia associated with urinary tract infections. Coactin® binds to penicillin binding protein 2 (PBP-2) of certain gram-negative bacteria, preventing normal cell elongation and reproduction. This results in the formation of enlarged spherical forms which eventually burst. Coactin® is available in 1 gm and 500 mg vials, to be administered intravenously or intramuscularly.

BOOKS

Soll, Robert W. and Grenoble, Penelope B., 1985, *MS: Something Can Be Done And You Can Do It*, Contemporary Books, Inc., Chicago. $13.95.

Dr. Soll is a neurologist and immunologist. He is in private practice in Denison, Iowa. He presents an approach to the treatment of multiple sclerosis that he feels will affect the course of the disease as well as improve the quality of life for the patient. Dr. Soll's approach involves avoiding infections and eliminating food allergens from the diet. The book presents a background discussion of the disease, a discussion of the immune system, and a consideration of food allergies. Combining these thoughts, the author then advances his theories. It is to be emphasized that these approaches are theoretical and will require the passage of time to be substantiated. Yet, the approach is interesting.

Little, Deborah Whiting, 1985, *Home Care for the Dying*, The Dial Press/Doubleday and Co., Garden City, N.Y., $9.95. This book is based on the author's caring for her terminally-ill grandmother. It contains valuable advice to the caregiver. This is a supportive comprehensive guide to the emotional as well as the physical care of those with terminal illness.

Sloia, John F., Donohue-Porter, Patricia, and Schlussel, Laurie, 1984, *Diabetes: The Comprehensive Self-Management Handbook*, Doubleday and Company, Inc., Garden City, N. Y., $19.95. The combined efforts of a physician, a clinical nurse specialist, and a nutritionist provide a comprehensive educational program for people with diabetes mellitus. The emphasis is on self-management; a concept that is ever increasing in patient involvement of their illnesses. Patients must consult their personal physician before accepting this book as the "all there is to know" about diabetes mellitus.

Information of Interest

STATE DEPT. OF PUBLIC HEALTH

CHLAMYDIA TRACHOMATIS

THE MOST PREVALENT, and possibly the most damaging, of all sexually transmitted conditions seen in the United States today are Chlamydia trachomatis infections. An estimated 3 to 4 million Americans suffer from chlamydial infection each year. Men, women, and infants are affected, but women in particular bear an inordinate burden because of their increased risk for adverse reproductive consequences. Economically, more than $1 billion are expended in direct and indirect costs annually on chlamydial infections, and the magnitude of these problems appears to be expanding.

Chlamydia trachomatis plays an important role in causing mucopurulent cervicitis, acute pelvic inflammatory diseases (PID), and maternal and infant infections during pregnancy. Chlamydia accounts for one-quarter to one-half of the one million recognized cases of PID in the United States each year.

These infections, in addition to C. trachomatis infections of the fallopian tube not clinically recognized as PID, contribute significantly to the increasing number of women who experience ectopic pregnancy or involuntary infertility. Besides mucopurulent cervicitis and PID, Chlamydia plays an important role in the urethral syndrome (dysuria-frequency syndrome), peri-hepatitis or Fitz-Hugh-Curtis Syndrome. Maternal infection during pregnancy has been associated with post-partum endometritis and in some studies with increased perinatal mortality.

Infants with infected mothers can acquire a Chlamydia infection at birth from contact with infected cervicovaginal secretions. Each year more than 155,000 infants are born to Chlamydia infected mothers.

Chlamydiae are unique microorganisms whose specific properties have been delineated only in the last 2 decades. Although they are classified as bacteria, they share properties with both viruses and bacteria. Like viruses, Chlamydiae grow only within the host cells' cytoplasma. Unlike viruses, however, Chlamydiae contain both DHA and RNA, divide by binary-fission, and have cell walls similar to those of gram-negative bacteria.

Chlamydia trachomatis became a reportable disease in Iowa on October 16, 1985.

In men, C. trachomatis is the leading (roughly 50%) cause of non-gonococcal urethritis (NGU), a Sexually Transmitted Disease (STD) with an estimated incident 2.5 times that of gonococcal urethritis. Chlamydia is also responsible for approximately 50% of the estimated 500,000 cases of acute epididymitis seen each year in the United States. This painful, serious complication of non-gonococcal urethritis may result in male sterility.

Loss of the ability to reproduce is the most dreaded sequela of Chlamydia infections in women. In inflicting its damage, Chlamydia operates on both sides of the reproduction coin. On one side, Chlamydia prevents desired conception by causing tubal infections (PID) that result in infertility.

On the reverse side of the reproductive coin, beyond conception, Chlamydial infection during pregnancy may lead to adverse outcomes.

This information on public matters is furnished and sponsored by the Iowa State Department of Health.

The prevalence of Chlamydial infections in pregnant women has been estimated to be as high as 18%, with those at highest risk being unwed teenagers living in urban areas.

Risk Assessment

Sexually active women less than 20 years of age have Chlamydial infection rates 2 to 3 times greater than women over 20 years of age. Similarly, teenage males have higher rates of urethral infection than adults.

Exposure

Individuals with a history of sexual exposure to men or women with a Chlamydial or gonococcal infection are known to be at high risk for Chlamydial infection themselves.

Women who are sex partners of men with confirmed Chlamydial urethritis, NGU, or gonococcal urethritis have respective endocervical isolation rates of approximately 70%, 37% and 36%.

Men who are sex partners of women with confirmed Chlamydial mucopurulent cervicitis or PID have urethral isolation rates of 25-50%. Many of these patients are asymptomatic.

Laboratory Methods

Culture

Tissue culture is presently the "gold standard" for laboratory diagnosis. Although published methods are fairly standard, in practice many laboratories introduce variations which alter the sensitivity and specificity of the test. Rigorous adherence to standard methodology is strongly encouraged.

Antigen detection

To date, 2 methods of antigen detection are available: (1) a fluorescent antibody examination of a direct smear (Microtrak, manufactured by Syva Diagnostic); and (2) an enzyme immunoassay (chlamydazyme, manufactured by Abbott Diagnostics). Cell cultures and the 2 different antigen detection tests are currently the only diagnostic methods acceptable for Chlamydial infection screening. Cell culture remains the most accurate test, but is costly and takes 2 to 3 days for results.

Antigen detection tests have emerged as reasonable alternatives, but questions remain about their reliability in low prevalence populations.

(Please turn to page 561)

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STATE DEPARTMENT OF PUBLIC HEALTH

(Continued from page 559)

Treatment Regimens

Uncomplicated Urethral, endocervical in adults

Tetracycline Hydrochloride: 500 mg, PO, QID × 7 days
Doxycycline Hyclate: 100 mg PO, BID × 7 days

Alternate regimens for patients in whom Tetracyclines are contraindicated or not tolerated

Erthromycin Base or Stearate: 500 mg, PO, QID × 7 days

Sexual partners of individuals with sexually acquired Chlamydial infection and parents of infected infants should be examined and treated with one of the preceding regimens.

Recommendations

Practitioners should provide counseling to patients regarding their disease, the treatment, and that patient's overall responsibility.

Information conveyed to patients should minimally include:

1. *Instructions for taking medication.*
2. *Recommendation to abstain from sexual activity until medication is completed by both patient and partner.*
3. *The referral of sex partners to medical care.*

This paper has been prepared by Donald Ruberti, director, Sexually Transmitted Disease Control Section, Iowa State Department of Health.

OUR MAN IN EDUCATION

(Continued from page 551)

knowledge is combined with technical means like microscopy, chemical stains, toxin analysis, and so on, we become armed with very powerful arguments, not only for declaring the nature and operations of the physical universe, but for helping solve some of the practical dilemmas of politics, too.

And why do I tell you all this? Partly to provoke some thinking about the tenuous nature of evidence, proof and truth in either science or politics, and partly just to offer another example of how we live and learn, or at least, how we can if we keep our ears and eyes open.

October 1985 Morbidity Report

Disease	Oct. 1985 Total	1985 to Date	1984 to Date	Most Oct. Cases Reported From These Counties
Aids	1	11	5	County not listed
Amebiasis	2	49	60	Boone, Johnson
Brucellasis	0	5	2	
Chickenpox	150	5535	6517	Scattered
Campylobacter	27	272	272	Scattered
Cytamegalovirus	0	9	11	
Eaton's Agent infection	0	6	33	
Encephalitis, viral	3	27	29	Dubuque, Polk
Erythema infectiosum	0	0	51	
Gastroenteritis (GIV)	1571	12351	10587	Scattered
Giardiasis	39	420	327	Scattered
Hepatitis, A	7	44	46	Black Hawk, Madison, Polk
Hepatitis, B	12	79	84	Scattered
Hepatitis, Non A-B	0	14	14	
Hepatitis type unspecified	0	7	9	
Herpes Simplex	124	976	782	Scattered
Herpes Zoster	0	0	2	
Histoplasmosis	1	19	17	Webster
Infectious mononucleosis	15	139	120	Scattered
Influenza, lab confirmed	0	169	176	
Influenza-like illness (URI)	4012	30568	34339	Scattered
Legionellosis	4	11	3	Black Hawk, Cerro Gordo, Jefferson, Polk
Malaria	0	2	2	
Meningitis aseptic	6	44	54	Scattered
bacterial	13	110	99	Scattered
meningococcal	0	8	22	
Mumps	1	14	23	Warren
Pertussis	22	28	12	Franklin, Hardin Jones, Mahaska
Rabies in animals	6	134	134	Scattered
Reye Syndrome	0	4	2	
Rheumatic Fever	1	4	0	Shelby
Rubella (German measles)	0	1	1	
Measles	0	0	0	
Salmonellosis	30	248	206	Scattered
Shigellosis	2	18	84	Chickasaw, Dubuque
Toxic Shock Syndrome	0	6	13	
Tuberculosis total ill	3	49	55	Delaware, Louisa, Story
bact. pos.	3	46	50	Delaware, Louisa, Story
Typhoid Fever	1	3	0	Story
Venereal diseases:				
Gonorrhea	331	3631	3701	Scattered
Syphilis	1	18	11	Woodbury
Chlamydia	54	54	0	Scattered

Other Non-Reportable Diseases: Cryptococcal Meningitis — 1, Johnson; Ureaplasma Urealyticum — 1, Iowa, 1, Jefferson, 7, Johnson; Yersinia — 1, Floyd, 2, Page.

News About Colleagues

ABOUT IOWA PHYSICIANS

Dr. Elroy Peterson, Ames, recently retired after 33 years at the McFarland Clinic. Dr. Peterson received the M.D. degree at the University of Minnesota and had his internal medicine residency at Yale University. He joined the McFarland Clinic in 1952. . . . **Dr. Reynold R. Maixner,** Logan, has been named chief of staff at Community Memorial Hospital in Logan. **Dr. Patricia J. Siegfried,** Missouri Valley, was named president-elect. . . . **Dr. Milton Kiesau,** Postville, recently was honored at an open house in commemoration of his 50 years of medical practice. Dr. Kiesau received the M.D. degree at the U. of I. and had a surgery residency in Cleveland, Ohio. He joined his father in medical practice in Postville in 1935. . . . **Dr. A. A. Desai,** Independence, has been named a diplomat by the American Board of Internal Medicine. Dr. Desai received his medical education at University of Bombay in India and served his internal medicine residency at Trenton Affiliated Hospitals, Trenton, New Jersey. He is currently chief of internal medicine, at the Independence Mental Health Institute. . . . **Dr. Charles D. Bendixen,** Waterloo, is the author of "Prenuptial Divorce Agreement for Aircraft Partners," published in the June, 1985, issue of *The Flying Physician.*

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Dr. James B. Gault, Creston physician for 35 years, retired on June 1. Dr. Gault received the M.D. degree at Stanford University and interned at San Francisco County Hospital. Following military service, he joined Dr. John Hoyt in Creston in 1950. . . . **Dr. M. L. McCreedy,** Washington physician for 55 years, retired July 1. Dr. McCreedy received the M.D. degree at the U. of I. He began medical practice in Brighton in 1931 and located in Washington in 1945. Dr. McCreedy is a life member of the Iowa Medical Society. . . . **Dr. Gary Shultz,** Ames, presented a paper on "The Role of Radiation Therapy After Surgical Resection," at the 16th International Congress of Radiology in Honolulu, Hawaii. Dr. Shultz was also co-moderator at a session on radiation oncology in the treatment of lung disease. . . . **Dr. William Rohr,** Des Moines, has been appointed state medical examiner by Governor Terry Branstad. Dr. Rohr is currently pathologist and director of laboratories at Charter Community Hospital in Des Moines. . . . **Dr. Paul Ferguson,** Lake City, retired from the McCrary-Rost Clinic in July. Dr. Ferguson received the M.D. degree at the U. of I. and began medical practice in Lake City in 1951. He is currently president of the American Cancer Society, Iowa Division, and a past president of the Stewart Memorial Community Hospital medical staff.

Dr. John Whalen was selected 1985 Outstanding Alumnus at Central High School homecoming activities in Elkader. Dr. Whalen is a Dubuque internist. He has been active in the development of the Tri-State Dialysis Unit. . . . **Dr. James O. Brown** has joined the Carlisle Medical Center. Dr. Brown has the M.D. degree from the University of Kansas. He took a family practice residency at the U. of K. Prior to locating in Carlisle, he was a staff physician at Hill Air Force Base in Utah. . . . **Dr. Harold E. Eklund,** Des Moines, is the new secretary-treasurer of the Iowa Academy of Family Practice. Dr. Eklund is the president of the Polk County Medical Society. . . . **Dr. Charlton H. Barnes,** Clinton, was guest speaker at a recent meeting of the Clinton Medical Assistants. A member of the Iowa Mountaineers, Dr. Barnes spoke on his mountain climbing experience and a recent expedition to Mt. Kilimanjaro in Africa.

DEATHS

Dr. Millard A. Troxell, 67, Cedar Rapids, died September 27 at his home. Dr. Troxell received the M.D. degree at the U. of I. and served his dermatology residency at the University of Minnesota. He practiced dermatology in Cedar Rapids for 29 years until ill health forced him to retire in 1982. Dr. Troxell was a member of the American Academy of Dermatology; charter member and past president of the Iowa Dermatological Society.

Dr. Arthur C. Wubbena, 77, Rock Rapids, died at the Merrill Pioneer Community Hospital in Rock Rapids on September 28. Dr. Wubbena received the M.D. degree at Rush Medical School in Chicago. He began medical practice in Rock Rapids in 1938, retiring in 1984.

Millard T. Petersen, 80, Atlantic physician for 43 years, died October 24 at Cass County Memorial Hospital. Dr. Peterson received the M.D. degree at the University of Nebraska School of Medicine. He began medical practice in Atlantic in 1936, retiring in 1977. Dr. Petersen was a life member of the Iowa Medical Society.

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A Monthly Commentary

IN THE PUBLIC INTEREST

The '86 Legislative Menu

When members of the Iowa General Assembly convene January 13, there will be close to 50 health care-related bills available for lawmaker consideration. Though medical liability reform will be in the forefront from the perspective of the Iowa Medical Society, interest will be focused on other legislative measures, too.

An essential function of the IMS, representing the medical profession, is to study and analyze continuously all issues in the Iowa legislative hopper. Decisions on which bills to support and which to oppose are made on the basis of what appears to be in the best interest of the public and the profession.

In 1986, aside from liability reform, the priority subject areas appear most likely to be motor vehicle safety and the Iowa Medicaid program.

Once again, the Iowa Medical Society will work to pass legislation to assure greater safety for motor vehicle operators and passengers. These statistics support the need for legislation in this area:

- **Of 54 recent motorcycle fatalities in Iowa, 83% were not wearing protective headgear.**
- **In 1984, 78.5% of those killed in car accidents were not wearing seat belts.**
- **Through August of 1985, 49% of the traffic-related fatalities in Iowa involved alcohol use.**
- **In 1984, 475 moped operators or passengers were killed or injured in Iowa — 322 were 15 years of age or younger.**

Two years ago the Iowa Medical Society backed a law to require small children to be restrained when riding in a motor vehicle. The IMS is now supporting legislation to require the driver and front seat passengers to wear a seat belt or safety harness. A separate bill to require helmets for motorcycle and moped operators is being supported.

In addition, the Society will propose legislation to require 14 and 15 year-olds to pass practical and written tests to qualify for a moped license.

As regards the use of alcohol by drivers, the Iowa Medical Society supports raising the legal drinking age to 21 and establishing .05 blood alcohol concentration as the legal driving limit.

Of immediate and long-range concern to the IMS is the fate of the Iowa Medicaid Program. The program provides basic medical services to several categories of individuals and families. It recently experienced its fourth across-the-board budget cut in 6 years. As of November 1, physician reimbursement for providing care to Medicaid recipients was reduced by over 5%.

"The IMS is concerned that continued cuts in Medicaid reimbursement may create a deterrent to physician participation in the program," says Clarence H. Denser, Jr., M.D., chairman, IMS Committee on Legislation. "Physician overhead costs continue to rise with increases in medical liability premiums leading the way for many physician specialists."

A supplemental appropriation to Medicaid is being urged of the Iowa General Assembly early in 1986. Such action will help avert any potential limitation on the availability of services. The Society is in support of experimentation with alternate payment mechanisms and will participate in the study of reimbursement methodologies.

When combined with medical liability considerations and still other health care issues, the topics mentioned here assure that the Iowa General Assembly will have an ample and extremely important menu for 1986.

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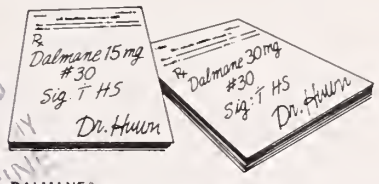
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